CRAWFORD

ALASKA DEPARTMENT OF FISH AND GAME
DIVISION OF COMMERCIAL FISHERIES

ANNUAL MANAGEMENT REPORT

1977

YUKON AREA

STAFF

ANCHORAGE AREA OFFICE--333 Raspberry Rd. 99502
Michael F. Geiger (Yukon Area Biologist)

FAIRBANKS FIELD OFFICE--1300 College Road 99701
Frederick M. Andersen (Yukon Assistant Area Biologist)

TABLE OF CONTENTS

INDEX TO FIGURES, TABLES AND ATTACHMENTS

FIGURES

TABLES

APPENDIX TABLES

APPENDIX TABLES (Continued)

ATTACHMENTS

PREFACE

This report presents the bulk of current and historical information concerning the management of commercial and subsistence fisheries in the Yukon area. Data from many special research projects are included in this report; complete documentation of these projects and results will be presented in separate reports.

The Yukon district was given area status in 1971. This report utilizes both the nomenclatures, i.e. "Yukon district" and "Yukon area" interchangeably.

Data presented in this report supercedes information found in previous management reports. An attempt has been made to correct errors in previous reports and previously unrecorded data have been incorporated into this report which are so indicated by the appropriate footnotes.

The report is organized into the following major sections:

1. Area Introduction. This section presents a detailed description of the area, inhabitants, fishery resources, fisheries and management practices.

2. Area Report, 1977. This section presents a detailed comprehensive report of the current year and makes comparisons with previous years.

In order to facilitate use of this report, tabular data has been separated into current year tables and appendix tables where annual comparisons are made. Text for each major section is followed by current year tables and then by appendix tables.

The following is an explanation of how effort and catch per unit effort data, presented throughout this report, have been derived. Boat (or fisherman) hours have been computed, artibrarily assuming that if a fishing boat delivers in any 24 hour fishing period, it is fished the entire period. If the period was more than 24 hours long, then the vessel is assumed to have fished the complete period for as many hours as was open to commercial fishining.

Catch per fisherman (or boat) hour is obtained by dividing the total fisherman hours into the catch for the corresponding period of time.

Total fishermen (or boats) is the total number of fishermen making deliveries, irrespectively of how many deliveries made or days fished during a particular "season". There are a number of fishermen who deliver only once or twice during the entire season.

"Total days fished" is the total number of hours open for commercial fishing during the season divided by 24.

Catch data for 1977 is preliminary. Final 1977 catch data, with only minor revisions anticipated, will be presented in the Appendix Tables of the 1978 annual management report.

AREA INTRODUCTION

Description of Area

The area (district) includes all waters of the Yukon River and its tributary streams in Alaska and all coastal waters from Canal Point light near Cape Stephens southward to Naskonat Peninsula (Figure 2). The Yukon River is the largest river in Alaska, draining approximately 35 percent of the state, and is the fifth largest drainage in North America (Figure 1). The river originates in British Columbia, Canada, within 30 miles of the Gulf of Alaska and flows over 2,300 miles to its mouth on the Bering Sea drainage, draining an area of approximately 330,000 square miles. With the possible exception of a few fish taken at the mouth or adjacent coastal villages, only salmon of Yukon River orgin are harvested in this area.

Fishery Resources

All five species of Pacific salmon are indigenous to the Yukon River drainage (Figure 1) with chum salmon being the most abundant. It is estimated that king salmon, coho salmon, pink salmon and red salmon follow in order of abundance.

Chum salmon are found throughout the Yukon River drainage. Summer and fall chum are the two distinct major runs of chum salmon entering the Yukon River. Summer chums are chiefly characterized by: earlier run timing (early June-mid July), rapid maturation in freshwater, smaller size (6-7 pounds), and larger population. Summer chums spawn primarily in run off streams in the lower 500 miles of the drainage. Fall chums are mainly distinguished by: later run timing (mid-July-early September); robust body shape and bright silvery appearance; larger size (7-8 pounds) and smaller population. Fall chums spawn in the upper portion of the drainage in streams which are spring fed, usually remaining ice-free during the winter. Major fall chum spawning areas include the Tanana, Chandalar and Porcupine River systems and also various streams in the Yukon Territory.

King salmon of the Yukon River are the largest species ranging from 2-90 pounds and averaging 20-25 pounds (sampled from commercial fishery, large mesh gill nets). Spawning populations of kings have been documented in the Andreafsky River system located approximately 100 miles from the mouth of the Yukon River and as far upstream as the headwaters of the drainage in the Yukon Territory of Canada, nearly 2,000 miles from the mouth. Kings enter the mouth of the Yukon River soon after breakup during June and early July.

Coho salmon enter the Yukon River during late July through mid-September, average about seven pounds in weight and spawn discontinuously throughout the drainage. The major coho spawning concentrations documented to date occur in the tributaries of the upper Tanana River drainage.

Pink salmon enter the lower river during late June - mid-July, average approximately 3 pounds in weight and essentially spawn in the lower portion of the drainage (downstream of the village of Grayling).

Red salmon are extremely rare in the Yukon River and only a few individuals are caught each year.

Other species common to the freshwater and coastal marine habitats include: sheefish, several species of whitefish, Arctic char, lake trout, grayling, burbot, suckers, sculpins, blackfish, sticklebacks, lampreys, smelt, capelin, herring, and several species of cods, flatfishes, crabs, shrimps and mollusks. Table 1 presents a list of fishes found in the Yukon area.

Water Quality

Water quality and spawning habitats in the area have been largely preserved in their original condition. Pollution, logging, dam construction and mining activities, except in a few locations, have been to date minimal or nonexistent. It remains to be seen what impact recent oil development activity will have on water quality and fishery resources in the area.

Subdistrict Boundaries

The present subdistrict boundaries were established in 1961 and redefined in 1962, and 1974. The commercial fishing area is divided into six subdistricts for management and regulatory purposes (Figure 2). The Lower Yukon area includes the coastal waters of the district and that portion of the drainage from the mouth to the Bonasila River (lower three subdistricts). The Upper Yukon area is that portion of the drainage upstream of the Bonasila River to the U.S./Canada Border including the Tanana River (upper three subdistricts). The subdistricts are further subdivided into statistical areas for management purposes. Figures 3, 4, and 5 present the lower three subdistrict statistical area charts. Figures 6, 7 and 8 present the upper three subdistrict statistical area charts. Yukon River mileages are presented in Table 2.

Commercial Fishery History and Description

Historical Catch Trends and Status of Stocks

The first recorded commercial salmon harvest in the drainage dates back to 1903 when 70,000 pounds of king and chum salmon were taken in the Yukon Territory, Canada. A small commercial fishery for these species still exists in Yukon Territory, primarily in Dawson.

The first recorded commercial salmon harvest in Alaska was in 1918 when Carlisle Packing Company operated a floating cannery at Andreafsky (now St. Marys). Relatively large catches of king, coho and chum salmon were made during the first four years of this fishery (Appendix Table 1). Since restrictions were placed only on commercial fishing inside the river's mouth, a majority of the catch was made in "outside" waters.

Because of the existence of a large upriver subsistence fishery, the early commercial fishery met opposition and was closed completely during 1925-1931. Commercial fishing for king salmon was resumed at a much lower level in 1932, and this species has been taken commercially each year since then. Only king salmon were harvested on a sustained basis prior to statehood (1959). During the period 1918-1959 king salmon commercial catches averaged approximately 30,000 fish annually. Since 1921, commercial catches of chum and/or coho salmon have been made during 1952-54, 1956 and since 1961.

Since the 1950's commercial salmon fishing has been permitted only upstream from the mouth of the Yukon River and in the vicinity of Black River. During the 1954-1960 period, a 65,000 king salmon quota was in effect for the river. Of this total, not more than 50,000 could be taken below the mouth of the Anuk River, 10,000 in the area between the mouths of the Anuk and Anvik Rivers and 5,000 upstream from the Anvik River. During these years, fishing was allowed for five and one-half days a week until specific quotas were obtained.

Under the new regulations established by the Department in 1961, the annual king salmon harvest for the entire district has averaged 104,371 for the period 1961-1970. This average compared to 63,023 for the previous period 1952-1960, represents an increase of 66 percent (Appendix Table 1). The greatest catch ever made in the district was 129,706 king salmon in 1967. Catches have declined since 1970, averaging 89,349 fish annually, because of below average runs and regulatory restrictions.

In 1975 the king salmon commercial catch of 63,000 was the smallest since 1960. During the same period (since 1960) commercial fishing effort increased substantially. A good run occurred in 1977, the return from the strong 1971 brood year run, and 96,000 kings were commercially harvested.

Restrictions placed on the commercial fishery during the 1970's have generally resulted in improved escapements compared to the 1963-69 period. With the exception of 1971 and 1977, escapements have not reached the levels observed during 1960-61.

In recent years the decline of the Yukon River king salmon is believed to be partially attributed to the Japanese high seas fishery. The high seas king salmon catches have averaged 284,000 fish annually during the period 1966-1976. A record 554,000 kings were taken in this fishery in 1969. In some years the Japanese catch has exceeded the total western Alaskan catch (subsistence and commercial). Based on tagging and scale analysis studies it is estimated that in excess of 80% of the Japanese king salmon catches are of western Alaskan origin (Yukon, Kuskokwim, and Bristol Bay stocks). This high seas fishery is intercepting western Alaskan king salmon at a higher rate than Bristol Bay sockeye salmon.

The I.N.P.F.C. Treaty has been recently negotiated to afford increased protection for western Alaskan salmon stocks. Improved Yukon River king salmon returns beginning in 1980 can be expected as a result of reduced high seas interceptions.

Since statehood the Yukon River commercial chum salmon fishery has steadily developed especially during the 1970's. During the period 1961-1965 commercial catches averaged 31,850 while during the same period subsistence chum catches averaged 400,874. As the subsistence ~~commercial~~ fishery declined and regulations were relaxed, coupled with the expansion of the fall chum fishery, the commercial catches averaged 145,295 during 1966-1970. The development of the summer chum fishery and expansion of the upriver commercial fishery resulted in commercial chum catches averaging 620,196 during the period 1971-1976. The largest chum salmon catch in the history of the Yukon River commercial fishery occurred in 1975 when 984,859 fish were taken (Appendix Table 1).

Prior to the mid 1960's summer chums were used primarily for subsistence, mostly for sled dog food. As the snow machine replaced the dog sled, subsistence fishing for summer chums declined. Beginning in 1967, commercial fishing restrictions regarding summer chums have been liberalized as the dependence for subsistence declined. The Yukon River summer chum salmon commercial harvest has increased sharply as a result of regulation changes (e.g. mesh size specifications and earlier openings of the fishing season); increased fishing effort (including expansion of the upper Yukon fishery); the availability of processing and tendering facilities; higher prices paid to fishermen the development of Japanese markets; and the occurrence of very large runs in recent years. In 1967 only 11,000 summer chums were taken commercially while in 1975 a record 720,000 fish were harvested. The majority of the harvest takes place in subdistricts 1, 2 and 4.

The major summer chum salmon spawning tributaries include the Andreafsky and Anvik Rivers and several others upstream to and including those of the Koyukuk River drainage. Department tag and recovery population estimates indicated total runs of 3.2 and 1.6 million fish in 1970 and 1971, respectively. In 1975 the total Yukon River run was estimated in excess of 5 million fish based on commercial and subsistence catch documentation and aerial survey estimates. In the Anvik River an escapement of over 1 million summer chums was estimated in 1975. Overall, Yukon River summer chum escapements have been good in recent years, however escapements in that portion of the drainage upstream of the Koyukuk River mouth have been variable.

Chum salmon (both summer and fall run) bound for the Yukon River are probably being intercepted by the Japanese mothership fishery in the Bering Sea. This fishery annually harvests 2-4 million fish of which siginficant numbers are believed to be of western Alaska (including Yukon River) origin, although tagging effort in the areas heavily fished by the Japanese has been limited. Also Yukon River chums, in addition to other western Alaska stocks, are intercepted by the U.S. South Unimak fishery as demonstrated by tagging studies. Annual catches of this interception fishery range from 200-400,000 chums.

The commercial fishery for fall chum salmon in the Yukon River began in the early 1960's, however the fishery has only recently expanded (since 1968). During the 1961-1968 period, catches averaged 41,000 annually and since 1968 catches have averaged 229,000. The recent development of the fall chum fishery is also reflected by corresponding increases in fishing effort and processing facilities. In 1975 more than 700 fishermen participated in the fall chum fishery. Because of

their good quality (bright, silvery appearance, large size, robust body shape and high oil content), which is related to their destination to spawning areas in the upper portion of the drainage, fall chums are in great demand and are harvested in all fishing subdistricts. The majority (approximately 80%) of the fall chum commercial catches are taken presently in the lower three subdistricts.

Fall chums are of less importance for subsistence than summer chums throughout the Yukon River drainage except in that portion of the drainage upstream of the mouth of the Koyukuk River where it is estimated that fall chums comprise 60-75% of the total subsistence harvest.

There is evidence that the early run (late July-early August) of fall chums are bound for the Porcupine River system and Yukon Territory streams. The late run of fall chums (mid August-early September) are believed destined primarily for the Tanana River.

Run magnitudes, based on comparative catch data and limited escapement data, have fluctuated sharply depending on the brood year strength. Very large runs were experienced in 1970, 1971 and 1975 while poor runs occurred in 1973 and 1976. Aerial survey assessments of escapements began in 1972. Tanana River drainage escapements in general appear more stable and experience less fluctuation than the Porcupine River system. For example, escapements in the Fishing Branch River have ranged from 353,000 (1975) to 13,000 (1976).

The Department will maintain a 250,000 maximum fall chum salmon harvest until future returns from current levels of harvest can be evaluated. Beginning with the 1974 season the Alaska Board of Fish and Game established quotas of 200,000 chum salmon for the lower three subdistricts (combined) and 50,000 combined chum and coho salmon for the upper three subdistricts.

Coho salmon runs of the Yukon River are of lesser magnitude than fall chum salmon and are taken incidential to the commercial fishery for fall chums. Coho catches have averaged 6,829; 14,166; and 15,180 fish during the periods 1961-1965, 1966-1970, and 1971-1976, respectively.

Commercial salmon catches by subdistrict since 1960 are presented in Appendix Table 2.

The relatively recent development and expansion of the commercial salmon fishery has enabled many area residents to obtain a cash income. In recent years fishermen and processing plant employees have received over two million dollars annually (Appendix Table 12). Other forms of employment is often sporadic or nonexistent in this area. The vast majority of all commercial fishermen are Eskimo and Indian residents of the Yukon River drainage.

Most fishermen operate small outboard powered skiffs of 16 to 20 feet in length and do not use gill net rollers, power reels, etc. of any type. In the Yukon area set gill nets, drift nets and fishwheels are legal forms of commercial fishing gear.

A list of current Yukon area fishing regulations are presented in Attachment 3.

The majority of the salmon catch is presently processed as a fresh/frozen product in contrast to earlier years when canning and salting were of greater importance (Appendix Table 11). Salmon are processed at shore based or floating operations and also transported via aircraft outside the district for processing. In recent years, 1973-76, the wholesale value of the pack has averaged 5.6 million dollars.

Lower Yukon Area

The lower Yukon area consists of three subdistricts: subdistrict 334-10 (mouth to Anuk River including Black River); subdistrict 334-20 (Anuk River to Owl Slough near Marshall); subdistrict 334-30 (Owl Slough to the mouth of the Bonasila River) (Figures 3, 4 and 5).

Since the onset of the commercial fishing in 1918, the majority of the Yukon River harvest has occurred in the lower river area (primarily subdistricts 334-10 and 334-20) where fishing and processing effort is concentrated and fish quality is higher. Although the summer chum fishery has developed in recent years, the lower fishery during June and July is still primarily managed for the intensively fished king salmon run.

Beginning in 1961, when king salmon catch quotas were eliminated for subdistricts 334-10 and 334-20, these fisheries have been regulated by scheduled weekly fishing periods. The king salmon season in these two subdistricts opens June 10 and is closed by emergency order during late June or early July depending on timing and magnitude of the runs. Fishing time during the king salmon season was allowed for four days a week during 1961-1967, but was reduced to 3-1/2 days a week beginning in 1968, to 3 days a week in 1974 and to 2-1/2 days a week in 1977. This was done to provide for adequate king salmon escapements in the face of increasing fishing effort and efficiency.

Commercial fishing effort has increased sharply since 1961. License registration for set gill nets has more than doubled while drift gill net gear has tripled. Set gill nets are most commonly used, especially near the river mouth, but the use of drift gill nets has increased. Drift gill nets are legal forms of gear in the lower three subdistricts only. The best measurement of effort is the number of actual fishing vessels operated each year since fishermen commonly used more than one type of gear during the season. A total of 626 fishing vessels operated in the lower Yukon area in 1977. With the advent of the Limited Entry program, fishing effort has apparently stabilized at the 1977 levels.

Since 1960 subdistrict 334-10 and 334-20 commercial king salmon catches have averaged 92,254 fish annually (Appendix Table 2).

In subdistrict 334-30 the commercial salmon fishing season opens June 10 and is allowed four days a week until the 3,000 king salmon quota is taken.

Excluding the 1920's, sale of other species of salmon captured during the king salmon season in the area of the present lower two

subdistricts has been allowed only since 1967. Incidental catch of summer chum salmon was limited during this season as fishermen used gill nets of stretched mesh measure of eight inches or greater. However, beginning in 1970, each fisherman could substitute up to 50 fathoms of gill net of any mesh size in subdistricts 334-10 and 334-20. In 1973 all mesh size restrictions were lifted during the king salmon season (from June 1 through early July) in order to allow greater opportunity to use small mesh nets which are selective toward the more abundant chums. However, the majority of fishermen continue to fish the larger mesh king salmon nets during the king salmon season.

Since 1961 the commercial fishing season in the lower Yukon subdistricts has been reopened following the closure of the king salmon season. This second season is referred to as the "fall season" and primarily chum and coho salmon are taken. Prior to 1973 the mid-season closure during most of July and often late June was initially for the purpose of insuring an adequate supply of summer chum salmon for upriver subsistence fishermen. This closure also provided protection for the late stages of the king salmon run.

Subsistence fishing for summer chums has declined in recent years and the Department has liberalized regulations to provide for an earlier reopening in July to harvest the surplus. Concurrent with an early reopening of the season, a regulation was promulgated in 1973 specifying gill nets of only 6 inch mesh or less may be fished after a specified date in early July. Use of small mesh gill nets in early July allowed a greater harvest of summer chums and also minimized the king salmon catch. Beginning with the 1976 fishing season a regulation was promulgated which established a flexible range of dates from June 27 to July 5 after which only gill nets of 6 inch or less mesh gill nets may be used.

In recent years (1973-76) the lower Yukon area commercial summer chum salmon catch has averaged 427,074 fish annually.

Fall chum salmon have been harvested in the lower Yukon area beginning in 1961. Since expansion of the fishery in 1969 lower Yukon area fall chum catches have averaged 208,154 fish annually (1969-76). Beginning in 1974 a 200,000 chum salmon quota system (after mid-July) was implemented for the combined lower three subdistricts. Also fishing time was reduced from four to three days a week in subdistricts 334-10 and 334-20. These actions were necessary to stabilize the catch in view of increased fishing effort and to provide for a harvest in the newly developed upper Yukon area fishery.

The harvest of coho salmon in the lower Yukon area is dependent upon the duration of the fishing season (usually related to when the 200,000 chum quota is taken). Cohos peak during mid to late August. Lower Yukon coho salmon catches since 1960 have ranged from 350 to 36,641 fish and have averaged 12,262 annually (1961-76).

The bulk of the lower Yukon River salmon catch is destined for Japanese markets as a fresh-frozen product. Freezer ships and shore base operations that process fresh-frozen salmon are located in the vicinity of Emmonak. Some fresh salmon is transported by aircraft from St. Marys and Emmonak to Anchorage for further processing. Mild curing and hard salting operations are located at Black River, Chuloonawick and Mountain Village. A floating cannery is located near Emmonak and a

shore based cannery is operated at Mountain Village.

Upper Yukon Area

For regulatory and administrative purposes, the upper Yukon area is divided into three subdistricts: Subdistrict 334-40 extends from the mouth of the Bonasila River upstream approximately 350 miles to the mouth of Illinois Cr. near Kallands, subdistrict 334-50, from the mouth of Illinois Cr. upstream to the U.S./Canadian border (approximately 550 miles) and subdistrict 334-60, the Tanana River drainage, of which the lower 225 miles is open to commercial fishing (Figure 6, 7 and 8).

Prior to 1974, the Upper-Yukon area (above the confluence of the Koyukuk River) was designated as one subdistrict. By regulation, commercial fishing was allowed seven days per week until the quotas of 2,000 king salmon and 2,000 chum and coho salmon (combined) were taken. These quotas were established for the purpose of allowing the very limited commercial utilization which had occurred for many years.

In recent years, however, the upriver commercial fishery has expanded. Fishing effort nearly doubled from 1972 to 1973 and processors developed outside markets, due in part to the steadily increasing price of salmon the market was experiencing. In recognition of the developing upriver commercial fishery and the desire of fishermen in communities in the upper portion of the drainage for increased participation, the Board of Fish and Game adopted several major regulation changes prior to the 1974 fishing season. These new regulations provided for substantial increases in the upriver catches, reduced gear conflicts and, at the same time, made provisions for allowing escapement needs to be met:

(1) Subdistrict 334-40 was reduced in size and redefined as that portion of the Yukon River drainage from the mouth of the Bonasila River to the mouth of Illinois Creek at Kallands.

(2) Two new subdistricts were added: Subdistrict 334-50 and subdistrict 334-60.

(3) Salmon catch quotas were established for the upper Yukon area as follows:

(a) Subdistricts 334-40: 1,000 king salmon and after August 15, 10,000 chum and coho salmon combined for the area.

(b) Subdistrict 334-50: 3,000 king salmon and after August 15, 25,000 chum and coho salmon combined for the area.

(c) Subdistrict 334-60: 1,000 king salmon and after August 15, 15,000 chum and coho salmon combined for the area.

(4) In subdistricts 334-40, 334-50 and 334-60, the weekly commercial fishing period was reduced from 7 to 5 days a week.

Because of the common origin of salmon stocks harvested throughout the length of the Yukon River, the commercial and subsistence fisheries in the middle and upper river subdistricts cannot be considered separate

or distinct from those in the lower portion of the drainage. They do however, differ in several important respects.

For reasons of relative abundance, flesh quality and the existing regulation structure, the second, or fall run of chum salmon is the target species of the commercial fishery in subdistricts 334-50 and 334-60. The summer run of chum salmon is of paramount importance in subdistrict 334-40 and comprise in excess of 70% of the total upriver commercial harvest. Tradition, local fishing conditions, efficiency and relative ease of operation combine to make fishwheels the primary type of gear for harvesting chum salmon and account for roughly 95% of the commercial harvest of that species in the upper Yukon area. In contrast, the lower river commercial fishery, as mentioned earlier, focuses primarily on king salmon with only recent emphasis on expanding the commercial fishery for other species of salmon. Local river conditions and regulations dictate the exclusive use of set and drift gillnets in the lower Yukon area. The last major difference between the two fisheries is their relative size, both in numbers of fishermen and catch. Because of the developing nature of the commercial fishery in subdistricts 334-40, 334-50, and 334-60, and the absence of major summer chum salmon-producing streams in the upper portion of the drainage, the commercial harvest has averaged approximately 23% of the total district harvest for the years 1974 - 1977. During the same period, the upper-Yukon subdistricts have had an average of 175 participating fishermen or approximately 20% of the district total. Final implementation of the Limited Entry Program in 1979 is expected to stabilize year-to-year fishing effort at a slightly lower level.

King salmon are of minor importance to the commercial fisheries in the three upper drainage subdistricts having a total quota allocation of 5,000 kings. Regulations allow a total commercial catch of 1,000 kings in subdistricts 334-40 and 334-60 and 3,000 in subdistrict 334-50. Normally the king salmon quota is not taken in subdistrict 334-40, as most fishermen retain them for subsistence purposes. In subdistrict 334-60, the king salmon quota is normally taken during the third week of July and in most years the commercial season remains closed until early September. In the Tanana village to Hess Creek area of subdistrict 334-50, however, there is considerable set gillnet effort directed towards the capture of king salmon.

Unlike the lower river fisheries, relatively few summer chum salmon are taken commercially in the subdistricts 334-50 and 334-60. Because of their low abundance, advanced sexual maturity and consequent poor flesh quality, summer chum salmon are generally retained for personal use in these areas.

The majority of commercially caught king salmon taken in the upper Yukon area are transported to Fairbanks and sold to local supermarkets and restaurants as a fresh-frozen product. Most chum salmon harvested in the same areas are tendered by small aircraft and boats from collection points (fish camps) along the river and then are flown to processing plants in Unalakleet, Manley Hot Springs, Nenana, Fairbanks and Anchorage, where the majority are canned. A small portion of the fall chum salmon catch is marketed in a fresh-frozen state. Small quantities of king salmon and fall chums are smoke-cured and sold as "strips", a locally specialty product. Likewise, small numbers of chum salmon taken commercially are dried and sold as dog food.

Subsistence Utilization

There are approximately 10,000-15,000 Eskimo and Indian people in the area, the majority of whom reside in excess of 45 small villages scattered along the coast and major river systems. Nearly all of these native people are dependent to varying degrees on fish and game resources for their livelihood.

Subsistence fishermen operate gill nets largely in the main rivers and to a lesser extent in the coastal marine waters capturing mainly salmon, whitefish and sheefish. Fishwheels take considerable numbers of salmon in the upper Yukon and Tanana River. Beach seines are occasionally used near spawning grounds to catch schooling or spawning salmon or other species of fish. Traps and fish weirs of various designs are also used, mainly in the fall and winter months, to capture whitefish, sheefish, blackfish and burbot. Sheefish, pike, char and "tomcod" (saffron cod) are frequently taken through the ice by hand lines.

There is usually little intentional wastage of the fish taken for subsistence purposes. The major portion is sun dried or smoked for later consumption while the head and viscera may be fed to sled dogs.

Comprehensive annual surveys of the Yukon River subsistence salmon fishery were initiated by the Department in 1961. Data obtained cannot be easily compared with that of earlier years which was often incomplete or lacking for many years. Methods and coverage of these earlier surveys were not documented and their accuracy cannot be determined. However, there are records indicating that in excess of one million salmon (mainly chums) were taken for subsistence in some years during the early 1900's and even as late as 1940 (Appendix Table 1).

The Department's subsistence fishery surveys (personal interview, catch calendar, and/or catch questionaires) obtain catch, effort and other associated data from villages and fish camps along the main river in Alaska, including portions of the Tanana River and Chandalar Rivers. Catch data from the Canadian portion of the drainage has been supplied by personnel of Environment Canada - Fisheries Service (Whitehorse office) since 1962. In recent years, the Department has conducted surveys of Koyukuk River villages.

About 1930 the airplane began replacing the sled dog as mail and supply carrier, starting the gradual decline of the subsistence salmon fishery. This decline has been accelerated in the past years as increased welfare payments and employment opportunities, including commercial fishing activities, have become available to the native people. The reduction in subsistence fishing is not necessarily related to fish abundance, but mainly reflects decreases in effort and dependence due to a changing way of life.

To illustrate changes in effort, there were 393 fishwheels operated on the Yukon River in 1918. Fishwheels are very effective if fished properly. A single wheel is capable of taking from 2,000 to 5,000 chum salmon annually. The number of fishwheels recorded during the 1970 survey was an all-time low of 56, a decrease of 113 since 1961. However, because of the expansion of the upper Yukon commercial fishery, beginning

in 1973, the amount of fishwheel gear has increased 176 units in 1977).

Another very important factor tending to affect subsistence fishing effort during recent years is the increasing use of snow vehicles which may be replacing sled dogs at a faster rate than did the airplane. Since considerable numbers of salmon and other fish are fed to sled dogs, fewer fish will be required for subsistence purposes as the canine population declines. In 1961 each fishing family kept an average of 7.7 sled dogs while in 1972 this figure was down to 3.4 sled dogs. However, due to the renewed interest in sled dog racing, the number of dogs per family increased to 6.0 in 1977. The number of snowmachines owned by fishing families was documented beginning with the 1967 season, when the average number of snow machines per family was 0.4. Since then the number of snowmachines has steadily increased and in recent years the average number of snowmachines has exceeded 1.3 per family (Appendix Table 16).

Reflecting the above changes in effort and dependency, the subsistence salmon catch has substantially decreased since the early 1960's. Comparing catches from villages surveyed each year ("Equivalent catches") the chum salmon harvest averaged 400,874 during 1961-1965. During the period 1966-1973 catches averaged 185,586 a decrease of 54 percent (Appendix Table 16). However, during 1974-1977 the subsistence chum salmon catches, utilized mainly for dog food, have increased, averaging 277,666. This increase can be attributed to above average size runs, especially summer chums and subsistence roe sales.

Subsistence catches of king salmon, which are utilized mainly for human consumption, have remained relatively constant during the period 1961-1976 generally averaging 15-20,000 per year.

The recent evolution (Appendix Tables 17 and 18) of the upper-Yukon and Tanana River subsistence fishery has also differed from that in the lower Yukon. Possibly because of the much older, larger and more sophisticated nature of the commercial fishery in the Yukon delta to Holy Cross area, a more pronounced dependence on a cash income has developed. In contrast, the recent development and limited nature of the commercial fishery in the upper Yukon and the absence of other employment opportunities may have retarded the transition to a cash based economy. For these reasons, it is speculated that residents of Yukon River villages in the Interior retain a greater degree of dependence on fishery resources for subsistence purposes.

For example, during the period 1971 through 1977, an annual average of 603 families in the district harvested salmon for personal use. Of these, approximately 326 fishing families reside in the lower river area and an average of 277 in the upper Yukon. Lower Yukon River subsistence fishermen comprise over 54% of the district total, yet harvested an average of only 27% of the total estimated catch. Subsistence fishermen residing upstream of the Bonasila River confluence (Mile 306) comprise only 46% of the total, however, account for approximately 63% of the estimated personal use harvest during the previous seven year period. Data collected during the years 1971-1977 indicate that in the lower Yukon, fishing families take an advantage of 28 king salmon and 203 chum salmon compared to 39 kings and 678 chums per fishing family in the upriver subdistricts.

It should be noted that the practice of keeping sled dogs is much more common in the upper Yukon than in the Delta area and is considered a major factor in the average consumption values presented above. It is also likely that the sale of subsistence-caught salmon roe (legal from 1974-1977) increased subsistence chum salmon catches above normal food requirements. Subsistence roe sales are not considered a significant factor affecting domestic use harvests in the twelve major villages in the Delta and lower Yukon River areas. (See section on subsistence roe sales).

Subsistence fisheries which target on non-salmon species such as pike, sheefish and whitefish are inadequately documented and their overall significance is not well known. It is suspected, however, that residents of the upper Yukon area are much less dependent on these miscellaneous species than are their downriver counterparts.

Management

The overall objective of the Yukon area research and management programs is to manage the various salmon runs on an optimum sustained yield basis. The commercial fishery is regulated on the assumption that a harvestable surplus, after providing for spawning and subsistence utilization requirements, is available. Subsistence fishing has been designated by the Board of Fisheries as the highest priority use. Although, where the dependence upon subsistence fishing has declined, the Department has liberalized regulations to allow development of commercial fisheries.

Management of the salmon runs is further affected by several limiting factors. Since most of the fisheries only became developed or expanded in recent years, there is a lack of adequate comparative catch and return data on which to evaluate the long term effects of increased commercial harvests. In contrast to other management areas in the state where intensive research studies have been conducted for many years, forecasts of actual numbers of salmon returning to the Yukon River system are not available. In addition, due to the character of the fishery, runs, and of the Yukon River itself, effective management is restricted. For example, the various fisheries scattered over 1,400 river miles are harvesting mixed stocks usually several weeks and hundreds of miles from their spawning grounds. The Yukon commercial fishery is essentially a "cape fishery" and as a result of fishing on mixed stocks, some tributary populations may be under or overharvested in relation to their actual abundance. For example, in a mixed stock fishery, where it is impossible to manage each stock separately, small spawning populations may be reduced to very low levels or even eliminated.

Due to the turbid water conditions of the main river (and some of its tributaries) and the vast size of the Yukon River drainage, accurate in-season assessment of the escapement immediately past the intensive downriver fishery is very difficult with the present available technology. Also in-season management of the runs (often mixed species) is hampered by the variable run timing and pattern of entry into the lower river fishery which causes difficulties when attempting to compare catch data. Also, some fishermen use small mesh gill nets, (5 1/2-6 inch) during the king salmon season in order to harvest the larger run of summer chums. As a result, catch data in recent years may not be comparable to earlier

years when 8-8-1/2 inch stretched mesh gill nets were primarily used.

Post season estimates of escapements in selected tributaries are being developed by establishing annual index areas. These estimates of spawning stocks, which may be limited by unfavorable stream and survey conditions (e.g. high water, inclement weather), are indicators of the total escapement. Comparable index stream estimates may eventually be of value in developing run forecasts.

It has been a policy of the Alaska Department of Fish and Game to maintain current levels of commercial utilization in order to establish definite trends in subsistence utilization and to obtain more information on the relationship between the salmon catch and return. It should be pointed out that increases in commercial fishing effort and efficiency are expected in some subdistricts and may balance any immediate decline in subsistence utilization with the result that present regulations will be maintained for even made more restrictive.

New research projects have been initiated and other programs are planned, contingent on additional funding, for obtaining the biological information necessary for better management of the salmon runs. For example, a comprehensive tag and recovery program was begun in 1976 to determine the relative timing and distribution of fall chum salmon stocks past the commercial fishery. If various stocks can be identified from this program and scale analysis studies, then the fishery can be effectively regulated in order to achieve the proper balance between catch and escapement. Future salmon studies include expansion of the test fishing program, sonar assessment of the escapement in the main river, and upgrading escapement documentation in tributary streams.

As a result of the above factors the management of the Yukon River salmon runs must take a conservative approach. This has been achieved by establishing harvest goals, mesh size restrictions, area catch quotas, reduced weekly fishing periods, fishing season closures, etc.

The basic regulation that governs the commercial salmon harvest in the district is the scheduled weekly fishing period and/or quotas. Commercial fishing is normally allowed for a total of from three to five days a week during the open season which depends on the subdistrict and species involved. Season catch quotas are utilized for the king salmon fisheries of the upper four subdistricts and the fall chum fishery throughout the district. Fishing effort usually occurs during the entire run and not just during any particular segment of the run.

During the fishing season if it becomes apparent that the run is substantially smaller or larger (based on analysis of comparative commercial and/or test fishing data) than needed for escapement and subsistence requirements, then the commercial harvest rates can be adjusted through the use of the emergency order or, less frequently, emergency regulation authority. A list of emergency orders and regulations dealing with changes in fishing time and other regulations issued for the Yukon area in 1976 is presented in Attachment 1. Also presented are 1977 regulation changes promulgated by the Board of Fisheries during its December, 1976 meeting (Attachment 2). A complete list of Yukon district current commercial and subsistence fishing regulations are presented in Attachment 3. A copy of the 1977 Yukon Area Management Plan is presented in Attachment 5.

The Division of Commercial Fisheries of the Alaska Department of Fish and Game is responsible for the management of commercial and subsistence fisheries in the state. The permanent staff assigned to the Yukon area includes three positions--one area management biologist, one assistant area management biologist and one research biologist. In addition approximately 10 summer employees are hired each season to assist the permanent staff in conducting various management and research studies. Also the staff aids in the enforcement of regulations in cooperation with the Fish and Wildlife Protection Division (Department of Public Safety).

Operating expenses for the Yukon area management and research program from July 1, 1976 through June 30, 1977 were approximately $208,500. State and federal funds provided $176,200 and $32,300 respectively of this budget.

In addition to the salmon management and research programs, the staff works to obtain needed information to determine the potential for commercial fisheries on underutilized species such as whitefish.

A unique problem in the lower river area is the language/communication barrier. Many of the older native people cannot read or speak English. Therefore, the staff must often use translators when conducting the many public meetings that are annually held throughout the area. While it may normally take only half an hour or so to conduct a public meeting or hearing in English, it usually takes two to three times that long when Eskimo translators are used. To assist in education and information, a weekly fishery program is broadcasted during the fishing season over radio stations KNOM and KICY in Nome, KYUK in Bethel and various radio stations in the Fairbanks area.

Special Studies

Attachment 4 lists special studies undertaken during 1977 and includes a summary of objectives, procedures and results for each.

AREA REPORT, 1977

Area Season Summary, 1977

In 1977 king salmon run was judged to be strong as was the coho salmon run; however, both the summer and fall chum salmon runs were considered average in magnitude based on comparable catch and escapement data.

In 1977 there were 96,414 kings; 37,705 cohos; and 797,697 chums, totaling 931,816 salmon taken commercially. This was the third largest harvest recorded for chum salmon and for all species combined (Appendix Table 1). The coho catch was the largest in history. Tables 4 and 5 present 1977 commercial salmon catches by fishing season and statistical areas. Tables 7 through 12 present daily catch data for each subdistrict.

In 1977 the king salmon catch was 13,000 fish above the previous five year average of 83,704 fish. The 1977 catch data presented in this section does not include king and chum salmon taken commercially by Canadian fishermen in Yukon Territory (Appendix Table 1).

The 1977 commercial chum salmon catch exceeded the previous five year average by 110,083 fish. The harvest was composed of 548,959 summer and 248,739 fall chums.

In 1977 the commercial coho salmon catch was more than double the previous five year average of 16,531 fish.

Subsistence harvests in 1977 in the Yukon area (excluding Yukon Territory) were estimated at 20,101 king and 292,916 chum and coho salmon combined.

A total of 1,092 commercial, 808 vessel, 650 set gill net and 344 drift gill net licenses was issued for the area in 1977 (Appendix Table 3). Also a total of 127 fishermen indicated their intent to operate fishwheels (No gear license required for fishwheels).

In 1977 a total of 741 CFEC gill net permits and 161 fishwheel permits were issued in the area. The actual number of commercial fishing vessels, that made at least one salmon delivery during the season, are shown in Appendix Table 4.

The above license totals do not include commercial and vessel licenses issued for fish tendering purposes throughout the district. Table 6 shows the residency of all persons issued fishing licenses for 1977.

The majority of the king salmon catch was processed primarily as a fresh/frozen product and to a lesser extent by canning and mild curing hard salting. The majority of the chum and coho salmon were fresh/frozen. Production of salmon roe totaled 210,568 pounds in 1977, including 78,838 pounds of salmon roe purchased from subsistence fishermen (Appendix Table 15). Commercial salmon production data is presented in Appendix Table 11. All buyers and processors operating in the Yukon district during 1977 are listed in Table 3.

Yukon district commercial fishermen received a record $4,069,000 for their catches in 1977. In addition, a minimum estimate of $850,000 in wages was earned by processing plant employees and tenderboat operators. The latter figure was obtained from information supplied by a majority of the buyers and processors. The first wholesale value of the 1977 pack was estimated at a record $10,500,000 (Appendix Table 12).

Average fish prices and salmon weights from 1960-1977 are presented in Appendix Tables 13 and 14, respectively.

Commercial Fishery, 1977

Lower Yukon Area

The 1977 lower Yukon (subdistricts 334-10, 334-20 and 334-30)

commercial salmon catch totaled 690,934 fish which was comprised of 90,180 king; 564,333 chum (373,911 summer and 190,422 fall chums) and 36,421 coho salmon.

Fishing effort, in terms of licensed fishing vessels and actual number of boats fishing during the season, was similar to the previous years in subdistricts 334-10 and 334-20. However in subdistrict 334-10, fishing effort was down 15 percent. In 1977 a total of 862 commercial, 635 fishing vessels, 586 set gill nets, and 344 drift gill net licenses were issued in the lower Yukon area. Also, a total of 675 C.F.E.C. permits were issued to lower Yukon gill net operators.

King Salmon: For the third straight year the king runs entering the mouth of the Yukon River were late. Although the timing of the breakup of the lower Yukon River was considered about "normal" (the main river was essentially clear of ice by June 1), extensive ice along the coast and extending several miles offshore was observed in early June. On June 3 for example, Black River was still frozen. Department test nets at Flat Island captured the first king salmon this year (June 9).

Peak king catches in subdistrict 334-10 were made during June 23-25 when 26,300 fish were taken in a 36-hour period, one of the largest single period catches on record. Catch per boat hour data (king salmon season) was the highest ever recorded (Appendix Tables 5 and 6), indicating a substantially large run.

King salmon catches were all distributed throughout the delta area and were especially good in Black River (10,714 fish) and the middle mouth (15,181) (Appendix Table 7).

Fishing time in subdistrict 334-10 was reduced from 36 to 24 hours for the period June 30 to July 1 by emergency order in order to maintain the harvest within recent year levels. Effective July 2 an emergency order was issued allowing only the use of 6 inch or less mesh gill nets in the lower two subdistricts. This action minimized the catch of the late run of kings and provided for increased catch efficiency of the more abundant summer chums.

The commercial fishing season was closed in subdistrict 334-30 by emergency order on June 30 when the 3,000 king salmon quota was taken. The fishing season in this subdistrict was later reopened on July 26.

Summer Chum Salmon: The first fish was taken on June 11 by department test fishing nets in the south mouth area. The peak of the summer chum run (based on test fishing catches) on the lower river occurred during June 28 - July 4.

A total of 161,368 summer chums were taken during the king salmon season (no mesh size restriction) in the lower Yukon area. The majority of the summer chum catch (212,543 fish) was taken during the fall or second season when the six inch maximum mesh size regulation was in effect (only 5,169 kings were taken incidentally during the fall season). Comparative summer chum salmon catch data for subdistricts 334-10 and 334-20 are presented in Appendix Table 8.

Fall Chum Salmon: The first fall chum was taken in the lower portion of subdistrict 334-10 during the fishing period July 11-12. During subsequent fishing periods the proportions of the chum catch composed of fall run fish steadily increased and by July 25-26 the catch was almost exclusively fall chums. Fall chums characteristically exhibit very eratic run timing in the lower Yukon River. Peak catches in subdistrict 334-10 occurred during the periods July 18-19 (21,404 fish), August 8-9 (51,680), and August 15-16 (18,858). The August 8-9 catch was the largest 24 hour period fall chum catch ever taken. A total of 199,581 chums were taken toward the 200,000 chum quota in the lower Yukon and the breakdown of the quota catch was as follows: subdistrict 334-10 ((131,766), subdistrict 334-20 (51,994) and subdistrict 334-30 (15,821). Comparative fall chum salmon catch data for subdistrict 334-10 is shown in Appendix Tables 9 and 10.

The 1977 fall chum run was anticipated to be below average in magnitude, especially the early portion of the run, based on parent year (1973) catch and escapement data. Accordingly fishing time in subdistricts 334-10 and 334-20 was maintained at 2-1/2 days after July 10 instead of the usual 3 day a week schedule by emergency order. Effective July 21 fishing time in subdistricts 1 and 2 was further reduced to 2 days a week. Also in subdistrict 334-30 fishing time was reduced by emergency order from 4 to 3 days a week effective July 25. These reductions in fishing time provided for increased escapements; allowed for more fishing over a greater portion of the run; allowed fishing for the later arriving coho salmon run (because of the longer season); and resulted in a more equitable distribution of the fall chum catch between the lower three subdistricts.

The commercial fishing season was closed by emergency order effective August 23 in subdistrict 334-10, August 22 in subdistrict 334-20 and August 24 in subdistrict 334-30 when it was anticipated that the 200,000 chum quota would likely be attained.

Coho Salmon: The first coho salmon caught in the lower Yukon occurred during the fishing period of July 18-19 in subdistrict 334-10. Peak commercial catches were taken during the periods of August 15-16 and 18-19. In addition to a longer season this year, the increased coho salmon catch was attributed to an above average size run.

A total of 14 processors operated in the lower Yukon area during 1977. Three new processors operated this year: Whitney Fidelago (Emmonak); Alakanak Fisheries (Alakanak Native Corporation) and Maserculiq Fish Processors (Marshall Native Corporation). The increased competition for the fishermen's catch was reflected in higher fish prices. The M/V Indian a freezer ship operated by Schenk Seafoods near Emmonak, was lost with its cargo of frozen salmon in the Gulf of Alaska in early September.

Upper Yukon Area

During 1977, a total of 240,882 salmon of all species was harvested commercially in the upper Yukon area. Of this total, 6,234 were kings, 233,364 chums and an estimated 1,284 were coho salmon (Table 4). These figures represent 29% of the 1977 district total of all species.

A total of 230 commercial, 173 vessel, and 64 set gillnet licenses were issued for subdistricts 334-40, 334-50 and 334-60 during 1977. In

addition, 127 fishermen indicated their intent to operate fishwheels. Actual numbers of fishermen making deliveries of salmon were somewhat lower, with a total of 188. Of these, 96 were registered to fish in subdistricts 334-40, 53 in subdistrict 334-50 and 39 in the Tanana River (subdistrict 334-60). Overall license sales decreased by 20% from 585 in 1976 to 467 in 1977. Gradual implementation of the Limited Entry Program is responsible for the reduction in effort. In 1977 a total of 66 C.F.E.C. gillnet and 161 fishwheel permits were issued.

King Salmon: For the first time since the development of the upriver commercial fishery in 1974, the king salmon quota in subdistrict 334-40 was taken. During the period 1974 through 1976, fishermen in this subdistrict chose to retain the majority of their kings for subsistence purposes. Due in part to the large king salmon run experienced in 1977, fishermen in the Ruby and Galena areas may have sold king salmon in excess of subsistence needs and the season was closed by emergency order on July 28. The adjusted 1977 total commercial king salmon harvest in subdistrict 334-40 was 959; of these, 654 fish were taken in statistical area 334-42 (Galena to Kallands) and the remaining 305 fish in statistical area 334-10 (Anvik to Koyukuk).

The 1977 king salmon run in subdistrict 334-50 peaked during the week ending July 17, with 2,138 kings delivered that period. Exceptionally large catches during that and the following period brought the season total to 4,267 king salmon. As in past years, the reported commercial harvest in subsection 334-52 was low with a total of 283 kings taken in the area from Stevens Village to the U.S./Canadian border near Eagle. The commercial fishery in subdistrict 334-50 was closed on July 24.

In the subdistrict 334-60, the 1,000 king salmon quota was taken on July 29, and the commercial fishery was closed by emergency order on July 30, 1977. A total of 18 fishermen made deliveries during the king salmon season and the majority (47%) of the 1,008 kings harvested were taken in the Manley Hot Springs area.

Summer Chum Salmon: During the 1977 commercial salmon fishing season, a total of 175,047 summer chums were harvested in the three upper Yukon subdistricts. This catch was 20% below 1976 levels and represented 32% of the total district catch of summer chum salmon.

In subdistrict 334-40, the harvest of summer chum salmon was 169,569 and was second only to subdistrict 334-10 in total production of this species. A total of 87 fishermen participated in the summer chum salmon fishery in this subdistrict and catches peaked during the period ending July 15, when slightly over 85,000 chums were landed by 73 fishermen. As in the past three years, the majority (148,745 in 1977) of summer chums was harvested in the Anvik to Koyukuk area of this subdistrict. The remaining 20,824 were taken primarily by Galena area fishermen.

In subdistrict 334-50, a total of 1,153 summer chums were harvested during 1977. These figures are generally reflective of the smaller population of summer chum salmon in the upper portion of the Yukon River drainage and also indicate the generally depressed run of summer chums experienced in this area during 1977. The peak of this run occurred during the week of July 20 through 24, when 1,137 chums were landed by 40 fishermen.

A total commercial catch of 5,333 summer chums taken in the Tanana River indicated a stronger run than was actually experienced. Escapements of summer run chum salmon to the Salcha River were the lowest recorded since 1973. Catches peaked during the last week of July when 16 commercial fishermen made landings totalling 3,133 chums.

Fall Chum Salmon: As mentioned previously, the fall run of chum salmon is the primary target species of the upriver commercial fisheries with the exception of statistical area 334-41 of subdistrict 334-40. During 1977, a total of 58,317 fall chum salmon was harvested commercially from the three upper subdistricts. The subdistrict harvests were as follows: subdistrict 334-40 (13,996), subdistrict 334-50 (25,695), and subdistrict 334-60 (18,626).

Based on low parent year (1973) catch and escapement data, the 1977 return of fall chum salmon was expected to be weak. Accordingly, fishing time in the upper Yukon subdistricts was reduced from the normal five days per week to four days per week, in order to spread out effort on the various spawning stocks passing through the fishery. Quotas imposed on the commercial harvest of fall chum and coho salmon do not go into effect until after August 15.

The commercial season in subdistrict 334-40 was reopened on August 7, on a reduced fishing schedule; however, only 16 fishermen made deliveries during this period totaling 1,453 chum salmon. These fish were judged to be a mixture of late run summer chums and a lesser number of fall chums. Catches peaked during the period ending August 18 and a total 7,071 fall chums were landed by eighteen fishermen. As in past years, the majority of the commercial catch during the fall season was made by fishermen in the Galena to Ruby area (statistical area 334-42). Fishermen in the Anvik area delivered 1,680 fall chums or 12% of the late season harvest. The season was closed by emergency order on September 1.

Catches of fall chum salmon in subdistrict 334-50 totaled 25,695 during 1977. The commercial season was reopened on August 16, on a four-day-per-week basis. Catches peaked on August 31, when sixteen fishermen landed 3,163 chums for an average of slightly less than 200 fish per delivery. A total of thirty-four commercial fishermen participated in the fall fishing in this subdistrict. Of the twelve buyer/processors operating in this area during the king salmon season, only four purchased fish during the fall run.

As was done in 1976, the fall season commercial fishery in the Tanana River subdistrict was delayed until it had been determined (by monitoring subsistence catches) that harvestable numbers of fall chum had become distributed throughout the river. This strategy is employed to insure that no one spawning stock sustains the brunt of the fishing effort and secondly, to prevent the bulk of the catch from being made at Manley before appreciable numbers of salmon reached Nenana and Fairbanks. The commercial season was reopened on September 5, on a reduced (four days per week) schedule. Commercial fishing was allowed for only six and one half days before the season was closed by emergency order on September 14, 1977. Total catch for the second season in subdistrict 334-60 was 19,910 salmon, of which 1,284 were cohos. The fall chum salmon run into the Tanana River drainage, based on catch and escapement data, was judged to be above average.

Coho Salmon: This species is generally of minor importance in the upper Yukon drainage. Principle reasons for this are their late arrival to the upper river fisheries and their low abundance compared to fall chum salmon. Total estimated commercial harvest of coho salmon during 1978 was 1,284, all of which came from the Tanana River (334-60) subdistrict.

Subsistence Fishery, 1977

In 1977, an estimated 20,388 king and 267,127 other species of salmon, mostly chums, were taken in the Yukon River drainage (including Yukon Territory catches). In addition 2,520 king and 34,310 other species were taken in coastal villages located several miles south of the Yukon River mouth.

The 1977 Yukon River king salmon harvest was similar to the previous 16 year average of 20,804 fish (Appendix Table 16).

For the twelfth consecutive season, a relatively small catch of "other salmon" (mostly chums) was taken in 1977. However, the 1977 catch, the third largest since 1967, was attributed to the large summer chum salmon run and subsistence roe sales.

Table 14 presents 1977 catch data for each Yukon River community and Appendix Table 16 shows comparative Yukon River drainage historical subsistence catch data for 1918-1977. Historical Yukon River drainage subsistence catches by village for the years 1961-1977 are presented in Appendix Table 17 and 18.

For the first time, an effort was made in 1977 to determine the percent composition of salmon species (other than kings) taken for subsistence purposes. This was accomplished by revising the subsistence survey forms so that more specific information could be gathered (See Table 13).

Lower Yukon Area

A total of 4,977 king and 62,581 salmon of other species were estimated taken for subsistence in the lower portion of the drainage (mouth to Holy Cross) by 285 fishing families. Also 88 fishing families of the coastal villages of Scammon Bay, Chevak and Hooper Bay harvested 2,520 king and 34,310 other salmon. In addition these three villages reported a subsistence harvest of 5,050 pounds of herring.

Upper Yukon Area

In 1977, an estimated 12,604 king and 196,081 salmon of other species were taken by 375 fishing families in the upper Yukon River drainage (not including Yukon Territory catches). These figures represent 72% and 76% respectively of the district total catches of king and chum and coho salmon combined. A total of 176 fishwheels were operated by subsistence fishermen in 1977.

Permits are required for subsistence fishing in four areas of the upper Yukon River drainage: 1) The Tanana River drainage upstream of the Wood River confluence, 2) the upper Yukon River drainage from Hess

Creek to the mouth of Dall River, 3) that portion of the Middle Fork of the Koyukuk River drainage between Dry Gulch and Hammond River and, 4) between the mouths of the Rodo and Nowitna Rivers in subdistrict 334-40 (for fish other than salmon).

In the upper Tanana River drainage, subsistence fishermen are limited to a catch of five kings and 75 chum and coho salmon combined. In 1977, a total of 89 permits were issued for this area. Catches were reported by 33 fishermen and totaled 81 kings and 725 other salmon. The reason for this decline in reported harvest (2,857 kings and other salmon combined in 1976) is that the subsistence fishery in the Fairbanks area was prohibited (by Board action) during closures of the 1977 commercial salmon fishing season.

In the Yukon River permit fishery area, a total of 38 permits were issued for the 1977 season. Of these, eight were residents of Stevens Village and the remainder reside in the Fairbanks area. Reported total catches for this area were 467 kings and 2,567 salmon of other species.

Twelve permits were issued for taking whitefish and other miscellaneous non-salmon species in the upper Tanana River drainage and eight fishermen reported a total harvest of 4,121 whitefish, 61 burbot, 254 suckers, and 30 pike.

In addition, 46 permits were issued allowing the collection of salmon carcasses in the vicinity of the Delta River near Big Delta. Twenty-nine of these individuals reported harvests of 5,816 chum salmon carcasses.

No subsistence fishing permits were issued for the Koyukuk River permit area.

Enforcement, 1977

Lower Yukon Area

Enforcement activities of the Division of Fish and Wildlife Protection were much improved with the stationing of personnel equipped with a river skiff at Emmonak throughout most of the season. Compliance with subsistence and commercial regulations was generally very good and was attributed to increased enforcement coverage. The major enforcement problems concerned illegal fishing in the closed water areas in the south mouth (Chris Point area) and in the vicinity of Black River.

Upper Yukon Area

During the 1977 field season Fish and Wildlife Protection officers issued a total of thirteen citations for infraction of commercial and subsistence fishing regulations. In addition twelve written warnings were issued for violation less serious in nature. The most common violations observed were commercial or subsistence fishing during a closed period.

Escapement, 1977

The Yukon River drainage is too extensive for complete aerial survey escapement coverage during any given season. In addition, poor survey conditions prevented surveys from being flown during some years or have resulted in minimum counts. Table 15 presents aerial survey escapement data for all streams surveyed in 1977.

Appendix Table 19 presents comparative king salmon escapement data for selected tributaries during the 1959-1977 period. In 1977, king salmon escapements into the major spawning areas ranged from average to above average. A total of 3,507 kings were estimated by aerial surveys in the Andreafsky River system. In the Anvik River, a total of 1,354 kings were enumerated. King salmon escapements into various tributary streams of the Tanana River were considered adequate. In the Chena River 563 kings were observed and in the Salcha River a total of 1,202 kings were enumerated.

In the Yukon Territory, surveys indicated below average to average king salmon escapement levels. The Whitehorse Dam Fishway count of 277 kings was one of the lowest recorded. Due to possible problems associated with passage of adults through the fishway and mortality of smolts through turbines, the Whitehorse Dam Fishway is probably not a reliable index of king salmon escapements in the Yukon Territory. Alternate index areas should be established elsewhere to better monitor escapements.

Limited studies of the quality (sex ratio and age composition) of upper Yukon River drainage king salmon escapements were conducted. The Salcha River king salmon sex ratio was 2.0:1 in favor of females. In the Anvik River the sex ratio was 1:1. At Whitehorse the ratio was 1.3:1 in favor of females. Catch and escapement samples were composed primarily of age 6_2 and 5_2 fish.

Appendix Tables 20 and 21 present comparative summer and fall chum salmon escapements for selected streams. Summer chum escapements were judged good in that portion of the drainage downstream of the mouth of the Koyukuk River but below average elsewhere. In 1977, a total of 546,793 summer chum were documented in selected tributaries throughout the drainage. A minimum of 262,754 chums were documented in the Anvik River system. In the Andreafsky River (East and West Fork), aerial surveys indicated good escapements as 175,842 chum salmon spawners were enumerated in this system.

During the past six years the Department has conducted intensive surveys of fall chum and coho salmon spawners in the upper Yukon River drainage. Several major previously undocumented spawning areas have been identified in recent years. In 1977, escapements of fall chums were above average in the Tanana River system but fair elsewhere. A total of 17,925 fall chums, more than double any previous documented escapement, were enumerated in the Delta River. In the Yukon Territory, a total of 32,500 fall chums was enumerated in the Fishing Branch River, a tributary of the Porcupine River, in 1977 compared to the exceptionally

large escapement of 353,282 documented in 1975. Comparable fall chum salmon escapement data is presented in Appendix Table 21.

Tanana River drainage coho escapements, as indicated by surveys of the Clearwater Lake, Delta Clearwater and Nenana River systems, ranged from average to above average in 1977. Comparable coho salmon escapement data is presented in Appendix Table 22.

SALE OF SUBSISTENCE-CAUGHT SALMON ROE

Prior to the development of the Yukon River commercial fishery, most aboriginal residents of the Yukon River drainage were experiencing a traditional or "pure" type of subsistence livelihood. During this period, all or nearly all portions of fish captured were probably utilized in some manner. Salmon eggs or roe were consumed by people, with probably greater quantities fed to sled dogs. In recent years, however, with changes in the employment situation and initiation of government assistance programs, there has been a steady but gradual decline in the degree of dependence on subsistence fishing. Airplanes replaced dog teams as mail carriers and later the advent of snow machines played an even more important role in reducing the numbers of salmon taken for subsistence purposes. For these, and possibly other reasons, subsistence harvests (which have been carefully documented since 1961) have declined from a peak of 481,000 chum salmon in 1964, to a low of 138,000 in 1972. It should be noted that because king salmon are utilized primarily for human consumption, the catch of this species has been more stable than that of chum salmon and year-to-year harvest levels appear to be primarily a function of relative abundance. Reported subsistence king salmon catches have ranged from 11,000 in 1962, to 25,000 in 1963, and the average for the 17-year-period for which reliable data is available is 16,600.

As a result of interest from buyers, processors and fishermen, an emergency regulation was issued by the Commissioner in June of 1974 which allowed the unrestricted sale of salmon roe obtained as an unavoidable by product of legal subsistence fishing throughout the entire A-Y-K region. The rationale behind this action was an attempt to enable rural Alaskans to benefit economically from a by-product of a resource which would be otherwise thrown away. The concept, from its inception, was recognized as an experimental program to be continued or disallowed on the basis of Departmental and Board of Fisheries evaluation and recommendations. Issuance of the emergency regulation, in effect for 120 days, was coincidental with the beginning of the salmon runs.

The Legislature adopted an Act in 1975 with an effective date of May 29 that legalized subsistence salmon roe sales only in the A-Y-K region. These statutes contained the following important provisions:

1. Expiration date was January 1, 1977, which was subsequently extended to encompass the 1977 fishing season.

2. No person may purchase or trade for subsistence salmon roe unless he possesses an annual permit issued by the Commissioner.

3. The Commissioner may close any or all areas to the sale of subsistence salmon roe if the waste of carcasses, damage to stocks or circumvention of management programs is occurring.

A separate section defining the "waste of salmon" and penalties for violators was included.

4. If the subsistence catch in an area exceeds or is likely to exceed by 10% the 1974 subsistence catch for that area, the Commissioner shall close that area to the sale of subsistence salmon roe.

5. The Board of Fisheries may adopt regulations necessary to allow the sale of roe based on traditional subsistence needs coupled with the maintenance of salmon stocks on a sustained yield basis.

To administer the legislation, Commissioner Brooks issued an emergency regulation in June of 1975. This emergency regulation contained provisions pertaining to permitting and reporting requirements in addition to prohibiting subsistence roe sales in areas where the salmon runs were especially vulnerable or where recent subsistence salmon catches were negligible.

Regulations were promulgated by the Board of Fisheries in December of 1975 for the 1976 and 1977 seasons that were similar to provisions continued in the aforementioned emergency regulation. The Board regulations contained an important provision which provided that roe sales could be prohibited by emergency order when the subsistence salmon catch exceeded or was likely to exceed the 1970 to 1974 average annual harvest in any district, subdistrict or portions thereof.

On this authority, the Department established subdistrict quotas based on average roe weight per female and sex ratios by subdistrict beginning with the 1975 season. Prior to the 1977 season, the staff further refined this quota system by allocating quotas among village clusters in subdistrict 4 and by establishing separate quotas on the amounts of subsistence caught roe which could be taken from the fall chum and summer chum salmon runs based on estimated historical subsistence catches from each of the two runs. The creation of village cluster quotas were established, because during the 1975 and 1976 seasons, nearly the entire subdistrict quotas were taken by fishermen in the lower portion of subdistrict 4 (Anvik and Grayling) before appreciable numbers of salmon had arrived at the villages in the upstream portion of the 350 mile long subdistrict. Chum salmon roe quotas were split in certain subdistricts between the summer and fall runs to insure that, for example, the entire roe quota would not be taken from the summer chums, thus resulting in a greater than average harvest on that portion of the run. King salmon roe quotas were based on 1974 harvest levels.

The following subsistence catch levels and equivalent roe quotas (unprocessed weight) were established.

NUMBERS OF FISH
(ROE QUOTA IN POUNDS)

Subdistrict	Kings	Summer Chums	Fall Chums	Total Chums
1	1,441 (2,400)	--	--	23,982 (9,600)
2	2,808 (4,600)	--	--	30,723 (12,300)
3	3,114 (5,100)	--	--	6,187 (2,500)
4				
Anvik-Grayling	630 (500)	26,860 (10,800)	--	26,860 (10,800)
Kaltag-Koyukuk	2,178 (1,800)	35,809 (14,300)	--	35,809 (14,300)
Galena-Kallands	2,704 (2,200)	5,647 (2,200)	8,471 (3,400)	14,118 (5,600)
Subtotal	5,512 (4,500)	68,316 (27,300)	8,471 (3,400)	76,787 (30,700)
5	2,888 (4,800)	7,578 (3,000)	22,734 (9,100)	30,312 (12,100)
6	1,287 (1,100)	9,900 (4,000)	29,600 (11,800)	39,500 (15,800)
Total	17,050 (22,500)			207,491 (83,000)

The above roe quotas were tentative (based on limited past years' information on sex ratios and average roe weight). During the 1977 season, average roe weights and sex ratios were determined by periodically sampling the subsistence and commercial salmon catches. Roe quotas were then adjusted accordingly to insure that subsistence catches (numbers of fish) be maintained within the recent year levels.

The sale of roe from subsistence-caught salmon roe was allowed only along the Yukon River and that portion of the Tanana River downstream of the Chena River confluence. This regulation prevented the inception of "roe fisheries" in areas which previously sustained no appreciable subsistence fisheries or which were deemed susceptible to overfishing if an increased subsistence harvest were to occur.

Although the entire Yukon was open to roe sales, the vast majority of roe produced came from the Anvik to Nulato area in subdistrict 4 and from the Manley Hot Springs and Nenana area on the Tanana River. Although open to the sale of roe, only small amounts were taken in subdistricts 1 and 2, and no roe sales occurred upstream of Stevens Village, located in the lower portion of subdistrict 5.

It is interesting to note that although total roe quotas established for subdistricts 1, 2 and 3 comprised 35% of the allowable subsistence roe production for the district, that less than 9% of the total subsistence roe was produced within the Yukon subdistricts 1, 2 and 3 from 1974 to 1977. This probably reflects the greater dependence on the commercial fishery in that area and general disapproval of allowing subsistence roe sales. Conversely, during the 1974-1977 period, the upper Yukon subdistricts (4, 5 and 6) produced in excess of 91% of the total district production. Possible reasons for this are that residents of the upper Yukon drainage have in recent years made substantially higher subsistence salmon catches than their counter parts of the lower Yukon and are, therefore, more dependent on the subsistence fishery. Also, opportunities for entry into the recently developed commercial salmon fishery in the area are limited and it is suspected that (at least in some cases) individuals

saw the salmon roe fishery solely as an opportunity to increase their cash income.

Because of the extremely high value of salmon roe, buyers and processors had developed a both intensive and extensive collection system throughout the widely scattered villages and fish camps along the Yukon and Tanana Rivers. Large plastic containers were distributed among fishermen and those containing roe were transported daily by boat or float equipped aircraft to processing plants in Bethel, Galena, Manley Hot Springs and Fairbanks.

Harvests were monitored by requiring processors to complete roe tickets (modified fish tickets) on each purchase of eggs and to submit twice weekly production reports along with copies of the roe tickets to the Department.

The management strategy required that in-season estimates of catches be obtained; this was accomplished by translating pounds of roe sold to numbers of fish using sex ratio and average roe weight information obtained each week from catch samples. Temporary fishery technicians located in key villages were responsible for collecting this information.

Several emergency orders were issued during 1975-1977 seasons prohibiting subsistence roe sales in various areas and subdistricts when subsistence catch levels or "quotas" specified in the regulation were attained. These "quotas" which had been utilized for management purposes since 1975, represent traditional recent (1970-1974) harvests made prior to the legalization of subsistence roe sales. Subsistence fishing was legal after roe sales were prohibited, but it was observed that fishing effort declined sharply in many areas following the roe sales closures. This is characteristic of a subsistence fishery where the profit motive has become paramount.

Appendix Table 15 presents information on the (unprocessed) poundages of subsistence roe sold, numbers of persons making sales and economic values for each subdistrict by year. Chum salmon roe comprised approximately 92% by weight of all sales with the remainder being king salmon roe. Small amounts of roe from other species (primarily coho) were sold and these are included in the chum salmon totals.

A total of 310,200 pounds of roe was sold in the Yukon district during 1974-1977 worth approximately $455,000 to the fishermen and an estimated first wholesale value of $911,000. During the same period, the Yukon district produced approximately 3.8 million dollars worth of commercially caught salmon with an estimated value to the fishermen of 10.2 million dollars.

The numbers of fishermen making roe sales ranged from 237 in 1974 to 632 in 1977. These figures are somewhat inflated as it was common practice for fishermen to give roe to their children to sell. Yukon River commercial fishermen sold 60% by weight of the subsistence caught roe during the last four years, however, they comprised only 35% of all fishermen making deliveries. Earnings by Yukon River commercial fishermen in 1977 who sold subsistence roe averaged $748 compared with $230 for subsistence fishermen.

Traditionally, the use of the subsistence salmon fishery was limited by personal food requirements and the number of salmon which could be handled in a day and hung to dry or smoke during the season. These restraints do not apply, however, in a fishery where the profit incentive displaces that of personal food requirements. There is, of course, a maximum number of salmon which can be legitimately used by an individual for the maintenance of his food supply, however, there is no upper limit to the amount of money which can be put to good use. The high value of salmon roe (as low as $.50 per pound in 1974 to $4.50 per pound in 1977) has served as an incentive for some individuals, buyers and fishermen to risk violating either the intent or legal wording contained in the statues and regulations. Wastage, misuse and overfishing of the salmon resource were documented for specific times and locations during the past four years.

The 1974-77 catch for villages representatives of areas where the majority of roe sales occurred, increased 69% over the previous four-year-period. Increased catches were the greatest for Anvik, Grayling and Manley Hot Springs. All villages exhibited increased harvests with Tanana having the smallest increase. The average 1974-1977 catch for villages in areas either closed to roe sales or where sales did not occur increased 22%; however, relative to other areas, actual numbers of fish involved were small.

It should be recognized, however, that the increased catches may have been influenced by large chum salmon runs experienced in 1974 and 1975, as well as increasing numbers of recreational sled dog teams in many upper river villages.

Numerous instances of salmon wastage were reported to Department personnel during the period in which roe sales were allowed. Most of these reports were received during 1977 and involved stripping of roe from female chum salmon and discarding the carcasses into the river. People were reluctant to give names of individuals involved and for this reason, only one citation for wastage was issued. A more subtle and difficult-to-detect form of wastage has occurred at numerous locations, primarily along the middle and upper Yukon River. This involved fishermen taking numbers of fish far in excess of personal needs. In some instances, these fish were improperly cared for and spoiled on drying racks as a result; and in other cases, fish captured the previous season still remained in large numbers on drying racks and in smoke houses the following spring. It is also suspected that some of this excess subsistence harvest may have entered commercial channels as dog food.

Based on regulatory proposals submitted by fishermen's groups and Advisory Committees in the lower Yukon and Kuskokwim River areas in the fall of 1977 and on recommendations by the Department, the Board of Fisheries prohibited the sale of subsistence caught salmon roe in the Yukon and Kuskokwim districts. The Board's action reflected their concern that the policy of affording subdistence fishing the highest priority use is being threatened by over fishing, wastage and other abuses associated by subsistence roe sales. Continuation of such sales would require additional restrictions to be placed on existing subsistence and commercial fisheries, and may even impact maintenance of salmon stocks which are being harvested at or near the maximum allowable rate.

OUTLOOK FOR 1978

King Salmon

It is difficult to predict the relative magnitude of the 1978 Yukon River king salmon run. There are indications, based on commercial catch and escapement data, that the 1972 brood year run was above average in magnitude. The majority of the king salmon expected to return in 1978 will probably be composed of six-year-old fish originating from the 1972 brood year. Also seven-year-old fish (1971 brood year) are expected to contribute substantially to the return in 1978 based on the strong return of six-year-olds (approximately 75%) in 1977. Five-year-olds (1973) brood year are not expected to be abundant in 1978.

The expansion of the Japanese mothership fisheries in the high seas during recent years may possibly affect the numbers of king salmon returning to western Alaska in 1978. Most of the high seas king salmon harvest is composed of immature four-year-old fish, which normally return as six-year-olds two years later. Scale analysis studies conducted by the National Marine Fisheries Service indicate that the majority (in excess of 80%) of the king salmon intercepted by the Japanese mothership fishery originated from western Alaska rivers (including the Yukon River). In 1976 the Japanese mothership fishing fleet harvested an estimated 126,000 kings in the Bering Sea (Appendix Table 23). The I.N.P.F.C. Treaty has been recently renegotiated to afford increased protection for western Alaskan salmon stocks. Improved Yukon River king salmon returns beginning in 1980 can be expected as a result of reduced high seas interceptions.

In summary, based on available brood year run size data, the 1978 run of kings is expected to be of average magnitude. If a poor run develops, fishing time restrictions may be required during the 1978 season in order to obtain adequate spawning escapements. Until future returns can be studied, the commercial harvest of Yukon River king salmon should not exceed 70 - 80 thousand fish. This guideline harvest has been revised downward from the previously established limit of 90 - 105,000 kings in view of recent below average size runs and the necessity to provide for adequate escapements.

Summer Chum Salmon

Normally, Yukon River summer chum runs are primarily composed of four-year-old fish. Comparable age, sex and size composition data is presented in Appendix Tables 29 and 30. The return of four-year-olds in 1978 will be dependent on the strength of the 1974 brood year run and the survival of the resulting progeny. Based on the available commercial and test fishing catch and escapement data, the summer chum run in 1974 ranged from average to above average in magnitude. The contribution of five-year-old fish (1973 brood year) in 1978 is expected to be significant because of the apparent moderate strength of this brood year as indicated by the above return of the four-year-olds in 1977.

In summary, it is expected that the magnitude of the 1977 Yukon River summer chum run will be average to above average. The expected commercial harvest should total 500 - 700,000 fish, similar to recent years (1974-77). If the summer chum run in 1978 is below average in magnitude, fishing time restrictions will be necessary to insure adequate escapements.

Fall Chum Salmon

Four-year-old fish from the 1974 brood year are expected to be the predominant age class of the 1978 run. Escapements of fall chums in 1974 were judged to be above average in abundance. Upper Toklat, Sheenjek and Chandalar River escapements were considered good while upper Tanana River drainage and Fishing Branch River escapements were judged fair (Appendix Table 21). Also the return of five-year-olds (1973 brood year) and three-year-olds (1975 brood year) are expected to contribute significantly to the return in 1978.

In summary, the magnitude of the 1978 Yukon River fall chum is expected to range from average to above average. The expected commercial harvest should approach or slightly exceed the upper end of the 250,000 quota level. If the fall chum run in 1978 is below average in magnitude, fishing time restrictions will be necessary in order to provide for adequate escapements.

Coho Salmon

Four-year-old fish (1974 brood year) are the dominant age class. Adequate escapement information for coho salmon is lacking but surveys in the Tanana River system indicated average to above average escapements in 1974. The return in 1978 is expected to be of similar magnitude. The coho salmon catch is expected to total 10,000-20,000 fish, depending on amount of fishing effort exerted on the fall chum run and the duration of the fishing season.

YUKON RIVER BASIN

(330,000 square miles)

FIGURE 1

Pt. HOPE

BROOKS RANGE

KOTZEBUE SOUND

SEWARD PENINSULA

Porcupine R.

Chandalar R.

Ft. YUKON

YUKON R.

KOYUKUK R.

STEVENS VILLAGE

CIRCLE

334-50

(Y-5)

ILLINOIS Cr.

YUKON R.

GALENA

RUBY

TANANA R.

FAIRBANKS

334-40 (Y-4)

334-60

(Y-6)

NENANA

NORTON SOUND

(Y-1)

334-10

BONASILA R.

ck R.

(Y-2)

334-20

(Y-3)

334-30

FIGURE 2.

YUKON MANAGEMENT AREA

YUKON AREA

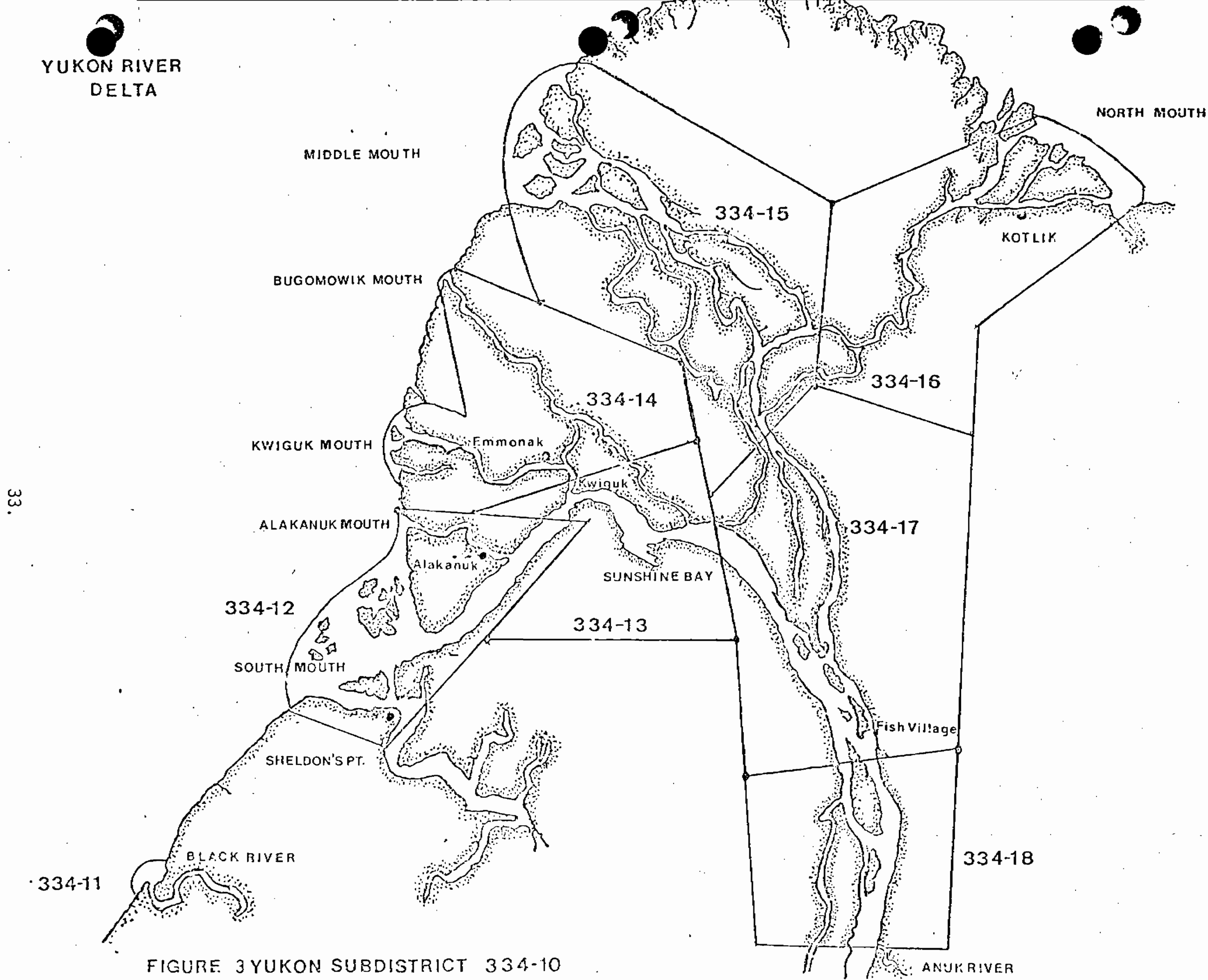

FIGURE 3 YUKON SUBDISTRICT 334-10

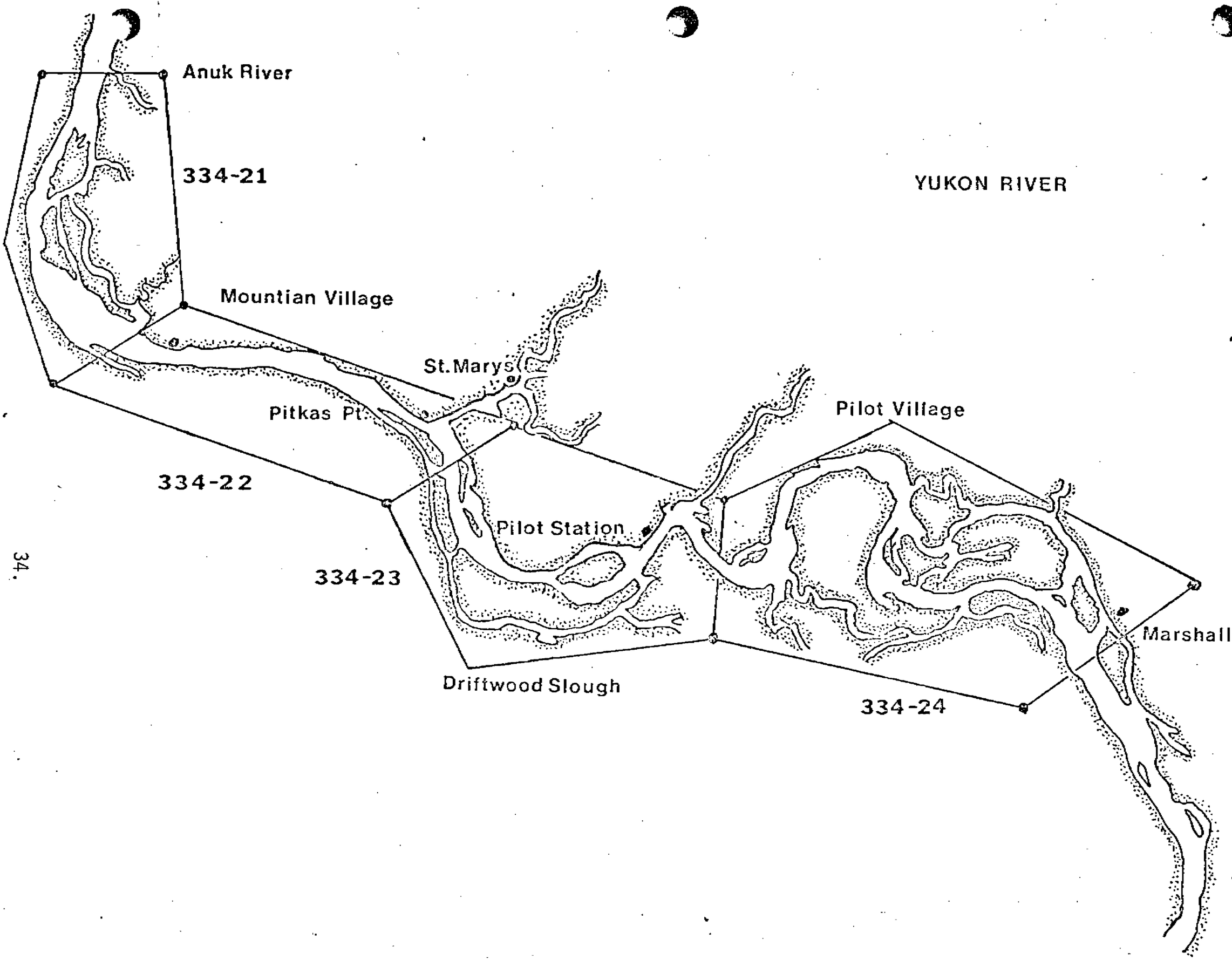

FIGURE 4 YUKON SUBDISTRICT 334-20

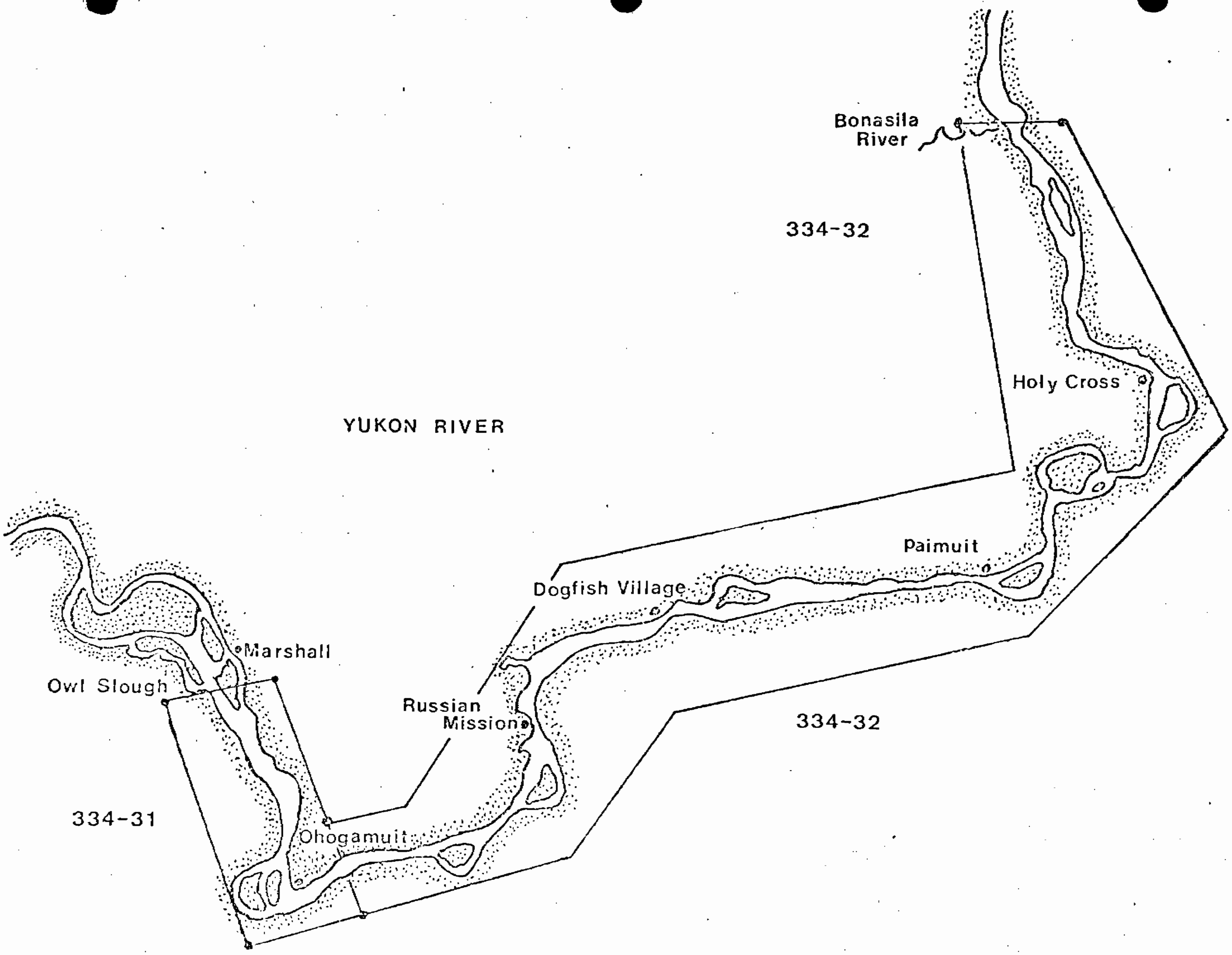

FIGURE 5 YUKON SUBDISTRICT 334-30

Illinois Cr.

334-51

Tanana

Kallands

Nulato

Galena

Ruby

334-61

334-42

Kaltag

334-41

YUKON RIVER

Grayling

Anvik

Bonasila R.

334-32

FIGURE 6. YUKON SUBDISTRICT 334-40

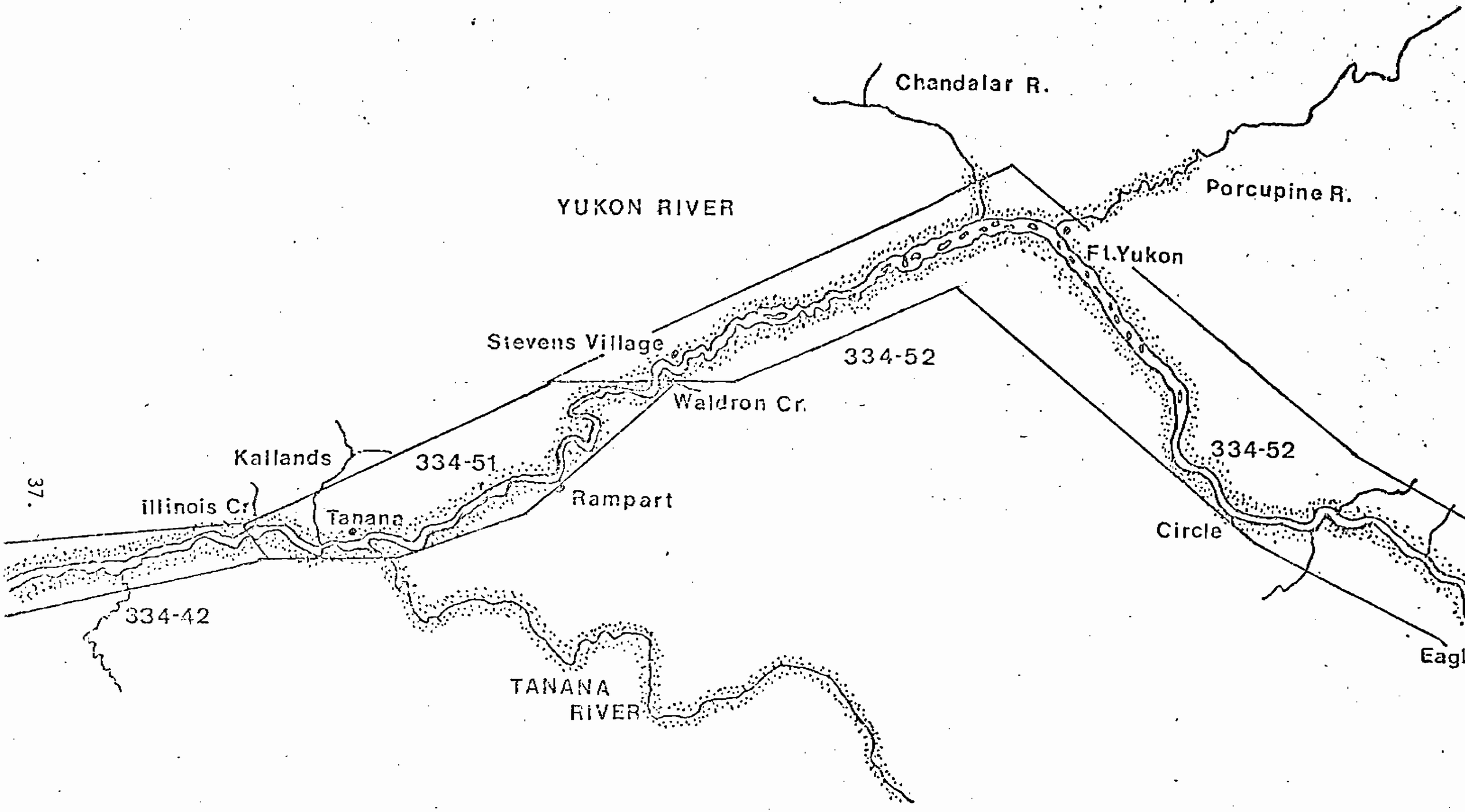

FIGURE 7 YUKON SUBDISTRICT 334-50

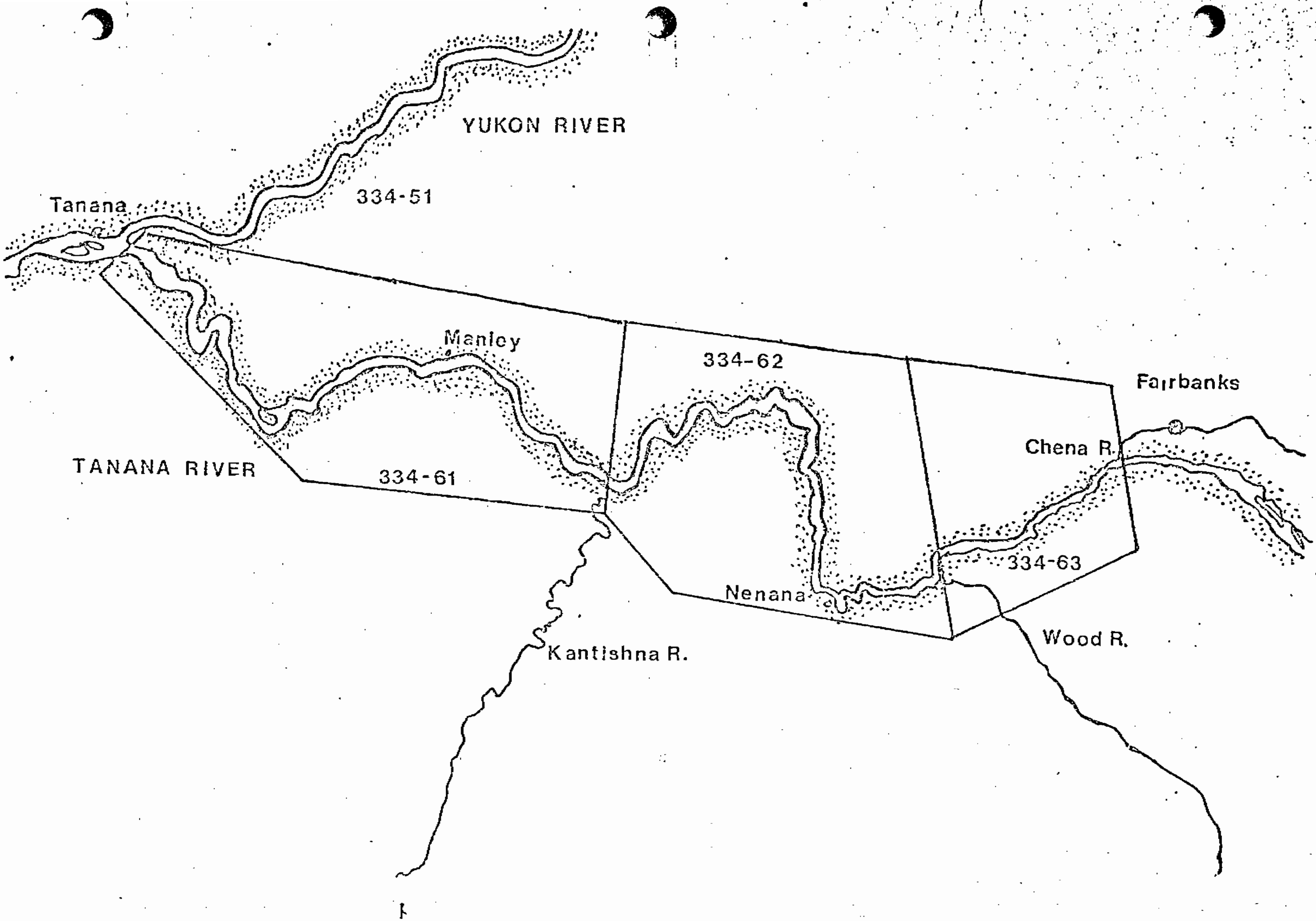

FIGURE 8 YUKON SUBDISTRICT 334-60

Table 1. List of indigenous fishes found in the Yukon area. 1/

Species Code	Scientific Name	Common Name
601	Lampetra japonica	Arctic lamprey
570	Stenodus leucichthys	Sheefish
581	Coregonus nasus	Broad Whitefish
582	Coregonus pidschian	Humpback Whitefish
583	Coregonus sardinella	Least Cisco
585	Coregonus laurettae	Bering Cisco
586	Prosopium cylindraceum	Round Whitefish
587	Prosopium coulteri	Pygmy Whitefish
610	Thymallus arcticus	Arctic Grayling
550	Salvelinus namaycush	Lake Trout
520	Salvelinus alpinus	Arctic Char
530	Salvelinus malma	Dolly Varden
410	Oncorhynchus tshawytscha	King Salmon
420	Oncorhynchus nerka	Red Salmon
430	Oncorhynchus kisutch	Coho Salmon
440	Oncorhynchus gorbuscha	Pink Salmon
450	Oncorhynchus keta	Chum Salmon
513	Osmerus mordax dentex	Rainbow Smelt
514	Hypomesus olidus	Pond Smelt
500	Esox lucius	Pike
630	Dallia pectoralis	Blackfish
650	Couesius plumbeus	Lake Chub
640	Catostomus catostomus	Longnose Sucker
670	Percopsis omiscomaycus	Trout-perch
590	Lota lota	Burbot, Lush
661	Pungitius pungitius	9-spine Stickleback
162	Cottus cognatus	Slimy Sculpin
	ESTUARINE	
113	Eleginus gracilis	Saffron Cod
121	Pleuronectes stellatus	Starry Flounder
122	Liopsetta glacialis	Arctic Flounder
230	Clupea pallasii	Pacific Herring
	Mallotus villosus	Capelin

1/ Includes fishes found in the Yukon River drainage in Canada.

Table 2. Yukon River Drainage Mileages

Location	Mileages from Mouth
North Mouth (Apoon Pass)	
Kotlik	6
Hamilton	26
Middle Mouth (Kwikpak, Kawanak Pass)	
Choolunawick	16
Akers Camp	26
New Hamilton	34
South Mouth (Kwikluak Pass)	
Mouth, Black River	-18
Flat Island Test Fishing Site	0
Sheldons Point	5
Tin Can Point	8
Alakanuk	17
Emmonak-Kwiguk (Kwiguk Pass)	24
Sunshine Bay	24
Aproka Pass (upstream mouth)	35
Kwikpak Pass (upstream mouth)	44
Head of Passes	48
Fish Village	52
Mouth Anuk River (Subdistrict 1/2 Boundary)	63
Patsys Cabin	71
Mountain Village	87
Old Andreafsky	97
Pitkas Point	103
Mouth, Andreafsky River	104
St. Marys	107
Pilot Station	122
Mouth, Atchuelinguk (Chulinak) River	126
Pilot Village	138
Marshall (Fortuna Ledge)	161
Upstream Mouth Owl Slough (Subdistrict 2/3 Boundary)	163
Ingrihak	170
Ohogamut	185
Kakamut	193
Russian Mission	213
Dogfish village	227
Paimuit	251
Mouth, Innoko River (South Slough)	274

Shageluk	328
Holikachuk	383
Holy Cross	279
Mouth, Koserefski River	286
Mouth, Bonasila River (Subdistrict 3/4 Boundary)	306
Anvik	317
Mouth, Anvik River	318
Grayling	336
Mouth, Thompson Creek	349
Blackburn	370
Eagle Slide	402
Mouth, Rodo River	447
Kaltag	450
Mouth, Nulato River	483
Nulato	484
Koyukuk	502
Mouth, Koyukuk River	508
Mouth, Gisasa River	564
Huslia	711
Mouth, Dakli River	755
Mouth, Hogatza River	780
Hughes	881
Mouth, Kanuti River	935
Alatna (Mouth, Alatna River)	956
Allakaket	956
Mouth, South Fork	986
Mouth, John River	1,117
Bettles	1,121
Middle Fork	1,141
Cold Foot	1,174
Wiseman	1,186
Bishop Rock	514
Prospect Point	519
Galena	530
Whiskey Creek	555
Mouth, Yuki River	562
Ruby	581
Mouth, Melozitna River	583
Horner Hot Springs	605
Kokrines	608
Mouth, Nowitna River	612
Birches	647
Kallands - Mouth of Illinois Creek (Subdistrict 4/5 Boundary)	664
Mouth, Tozitna River	681
Tanana Village	695
Mouth, Tanana River (Subdistrict 5/6 Boundary)	695
Manley Hot Springs	765
Mouth, Kantishna River	793
Mouth, Toklat River	838
Mouth, Sushana River	850
Mouth, Bearpaw River	887
Outlet, Lake Minchumina	959

Minto	835
Nenana	860
Mouth, Nenana River	860
Mouth, Wood River	894
Rosie Creek Bluffs	912
Mouth, Chena River (Fairbanks)	920
Mouth, Salcha River	965
Benchmark #735 Slough	991
Mouth, Little Delta River	1,000
Mouth, Delta Creek	1,014
Mouth, Clear Creek (Richardson-Clearwater)	1,015
Mouth, Shaw Creek	1,021
Mouth, Delta River (Big Delta)	1,031
Delta Junction	1,041
Mouth, Goodpaster River	1,049
Bluff Cabin Slough	1,050
Outlet, Clearwater Lake	1,052
Mouth, Clearwater Creek, (Delta Clearwater)	1,053
Mouth, Gerstle River	1,059
Outlet, Healy Lake	1,071
Outlet, Lake George	1,086
Tanacross	1,128
Outlet, Tetlin Lake	1,188
Mouth, Nabesna River	1,210
Northway Junction	1,214
Mouth, Chisana River	1,215
Mouth, Sheep Creek	1,297
Rampart Rapids	731
Rampart	763
Mouth, Hess Creek	789
Mouth, Ray River	817
Highway Bridge - Pipeline Crossing	820
Mouth, Dall River	841
Stevens Village	847
Mouth, Hodzana River	897
Beaver	932
Mouth, Hadweenzic River	952
Mouth, Chandalar River (Venetie Landing)	982
Venetie	1,025
Fort Yukon	1,002
Mouth, Porcupine River	1,002
Mouth, Black River	1,026
Chalkyitsik	1,084
Mouth, Salmon River	1,142
Mouth, Salmon Trout River	1,193
Mouth, Sheenjek River	1,054
Mouth, Coleen River	1,157
U.S.-Canadian Border	1,219
Old Crow	1,259
Fishing Branch River spawning area	1,600
Circle	1,061
Woodchopper	1,110
Mouth, Charley River	1,124

Mouth, Kandik River	1,135
Mouth, Nation River	1,166
Mouth, Tatonduk River	1,186
Mouth, Seventymile River	1,194
Eagle	1,213
U.S.-Canadian Border	1,224
Mouth Fortymile River	1,269
Dawson	1,319
Mouth, Klondike River	1,320
Mouth, Sixty Mile River	1,369
Mouth, Stewart River	1,375
McQuesten	1,455
Stewart Crossing	1,491
Mayo	1,520
Mouth, Hess River	1,594
Mouth, White River	1,386
Mouth, Donjek River	1,455
Mouth Kluane River	1,541
Outlet Kluane Lake	1,587
Burwash Landing	1,595
Kluane	1,625
Fort Selkirk	1,477
Mouth, Pelly River	1,478
Pelly Crossing	1,410
Mouth, MacMillan River	1,442
Ross River	1,602
Minto	1,499
Mouth, Tatchun Creek	1,530
Carmacks	1,547
Mouth, Little Salmon River	1,583
Mouth, Big Salmon River	1,621
Mouth, North Big Salmon River	1,641
Mouth, South Big Salmon River	1,657
Outlet, Big Salmon Lake	1,714
Mouth, Teslin River	1,654
Roaring Bull Rapids	1,707
Johnson's Crossing (Outlet, Teslin Lake)	1,756
Teslin	1,780
Mouth Nisutlin River	1,788
Mouth, Sidney Creek	1,837
Mouth, Hundred Mile Creek	1,851
Mouth, McNeil River	1,887
Outlet, Nisutlin Lake	1,892
Outlet, Lake Laberge	1,679
Inlet, Lake Laberge	1,712
Mouth, Takhini River	1,718
Whitehorse	1,745
Mouth, M'Clintock River	1,769
Outlet, Marsh Lake	1,764
Outlet, Little Atlin Lake	1,788
Outlet, Atlin Lake	1,812
Atlin	1,844
Tagish	1,786
Outlet, Tagish Lake	1,788
Carcross (Outlet Lake Bennett)	1,810
Bennett	1,835

Table 3. Yukon district processors and associated data, 1977.

Commercial operator (Processing location/buying station)	Product	Subdistrict
Yukon Delta Fish Marketing Co-op, Inc. Emmonak, Alaska 99581 (Emmonak)	Frozen salmon Kings Cohos Chums Salmon Roe	1
Amukon Trading Post Scammon Bay, Alaska 99662 (Black River)	Hard salt kings	1
Bering Sea Fisheries, Inc. 4413 83rd Avenue S.E. Everett, Washington 98205 (Lamont Slough)	Frozen salmon & canned (#1 talls) Kings Cohos Chums Salmon Roe	1
Alakanuk Native Corp DBA Alakanuk Fisheries P. O. Box 107 Alakanuk, Alaska 99554 (Alakanuk)	Frozen salmon Kings Cohos Chums Salmon Roe	1
Akers & Co., Inc. Chulooawick, Alaska 99587 via Emmonak, Alaska (Kwikpakak Slough)	Mild cured salmon Kings Chums Salmon Roe	1
Whitney Fidalgo Seafoods 2360 W. Commodore Way Box 99008 Seattle, Washington 98199 (Emmonak)	Fresh salmon Kings Chums Cohos	1

Table 3. Yukon district processors and associated data, 1977,(Continued).

Commercial operator (Processing location/buying station)	Product	Subdistrict
Schenk Seafood Sales, Inc. P. O. Box 984 Bellingham, Washington 98225 (Kwikluak Pass near Alakanuk)	Frozen salmon Kings Cohos Chums Salmon Roe	1
Salmon Products, Inc. P. O. Box 47 St. Marys, Alaska 99658 (St. Marys)	Frozen salmon Chums Kings Cohos	1 & 2
Azachorak Corp, DBA The Village Cannery Mountain Village, Alaska 99632 (Mt. Village)	Hard salt, frozen & canned (#1/2 flats) salmon Kings Chums Salmon Roe	1 & 2
Boreal Fisheries 19828 78th Ave. E. Spanaway, Washington 98387 (Old Andreafsky)	Fresh salmon Kings Chums Cohos Salmon Roe	2
Maserculiq Fish Processors Fortuna Ledge, AK 99585 (Marshall)	Fresh salmon Kings Chums Cohos Salmon Roe	2 & 3
Kemp Paulucci Seafoods Inc. Box 252 Bethel, Alaska 99559 (Pilot Stn, Marshall & Bethel)	Frozen salmon Kings Chums Cohos Salmon Roe	2, 3 & 4

Table 3. Yukon district processors and associated data, 1977, (Continued)

Commercial operator (Processing location/buying station)	Product	Subdistrict
Harry Turner Box 97 Holy Cross, AK 99602 (Paimiut)	Smoked salmon strips Kings	3
K & A Fisheries Aniak, AK c/o Joe Parent Kalskag, AK 99607 (Russian Mission)	Fresh salmon Kings Chums Salmon Roe	3
Patson Enterprises Box 445 Bethel, AK 99559 (Holy Cross)	Salmon Roe	2 & 3
Clark Fishing Enterprises Box 517 Aniak, AK (Ingrihak-Paimuit)	Fresh salmon Kings Salmon Roe	3 & 4
Alaska Iwasa Corp David Baker 4456 Business Park Anchorage, AK 99501	Salmon Roe	4
J. B. Crow & Sons Box 567 Bethel, AK 99559	Salmon Roe	4
Quality Aircraft Box 4-1583 Anchorage, AK 99509 (Kaltag)	Fresh salmon Chums Salmon Roe	4

Table 3. Yukon district processors and associated data, 1977, (Continued)

Commercial operator (Processing location/buying station)	Product	Subdistrict
Huntington Ventures Sidney Huntington Box 49 Galena, AK 99741	Fresh salmon Kings Chums	4
Nulato Fish Co. Box 4025 Clear, AK 99704 (Galena)	Fresh Salmon Chums	4
Grayling Air Service Ernest M. Chase Grayling, AK 99590	Fresh salmon Chums	4
Kallands Fisheries Reinhard Ruppprect 1/ Box 51 Nenana, AK 99760 (Kallands)	Frozen salmon Kings Chums	4
Interior Fisheries J. L. Wood SRA Box 168 Anchorage, AK 99502 (Galena and Manley)	Fresh salmon Kings Chums Cohos Salmon roe	4, 5, & 6
Walter Given Box 81246 College, AK 99708	Fresh salmon Kings	5

Table 3. Yukon district processors and associated data, 1977. (Continued)

Commercial operator (Processing location/buying station)	Product	Subdistrict
Roy A. Green P. O. Box 5243 North Pole, AK 99705	Fresh salmon Chums	5
P. Merry Guide Service SRA Box 1707 Anchorage, AK 99707 (Rampart)	Fresh salmon Kings Chums Salmon Roe	5
Wally's Fish Wagon Walter Carlo Box 32 Tanana, AK 99777	Fresh salmon Kings Chums Salmon Roe	5
Alaska Fish Co. Claire Lotspeich SR 20962 Fairbanks, AK 99701	Fresh salmon Kings	5
Robert Blake SR50308 Chena Hot Springs 3/4 Mile Fairbanks, AK 99701	Fresh salmon Kings	5
Sumner Joe Putnam Box K College, AK 99701	Fresh salmon Kings	5
Albert Carroll Circle, Alaska 99733 (Circle)	Fresh salmon Kings	5

Table 3. Yukon district processors and associated data, 1977, (Continued)

Commercial operator (Processing location/buying station)	Product	Subdistrict
Michael Geraghty Box 60430 Fairbanks, AK 99706	Fresh salmon Chums	5
Golden Eagle Enterprises 1/ David Martini Eagle, Alaska 99738 (Eagle)	Fresh and cured salmon Kings	5
Johnson Fish Co Terry Johnson 2107 Broadmoor Fairbanks, AK 99701	Fresh salmon Kings Chums Cohos Salmon Roe	5 & 6
Aurora Seafoods Joe Schruf 1260 Aurora Fairbanks, AK 99701	Frozen salmon Kings Chums	5 & 6
Jim Hanson 3247 Holden Rd. Fairbanks, AK 99701	Fresh salmon Kings	5 & 6
Don R. Simpson 1/ SR Box 20033 Fairbanks, AK 99701	Salmon, fresh & frozen Kings Chums	6
Arctic Diving Charles Anderson 1321 Karen St. Fairbanks, AK 99701	Fresh salmon Kings Chums Cohos Salmon Roe	6

Table 3. Yukon district processors and associated data, 1977, (Continued)

Commercial operator (Processing location/buying station)	Product	Subdistrict
Terry J. Clark Box 362 Clear, AK 99704	Fresh salmon Kings Chums Salmon Roe	6
Henry Ketzler 1/ Box 35 Nenana, AK 99760	Frozen salmon Kings Cured salmon Chums	6
Gurtler Enterprises 1/ Dian Gurtler Manley Hot Springs, AK 99755	Fresh salmon Kings	6
Catherine Ludecker 1/ SR 10392 Fairbanks, AK 99701	Fresh salmon Kings Chums	6
Nenana Reefer and Processing Edmund G. Lord Box 26 Nenana, AK 99760	Frozen salmon Chums Salmon Roe	6

1/ Processes own catch and sells directly to public.

Table 4. Commercial salmon catches by species and subdistrict, Yukon district, 1977.

Subdistrict	Kings	Summer Chums	Fall Chums	Total Chums	Cohos	Total All Species
334-10						
King Salmon Season 6/10-7/1	65,745	120,270	-	120,270	-	186,015
Fall or Second Season 7/4-8/23	3,711	143,125	122,577	265,702	30,588	300,001
(Before Quota Period 7/4-15)	(3,296)	(132,854)	(1,090)	(133,944)	(30,588)	(167,828)
(After Quota Period 7/16-8/23)	(415)	(10,271)	(121,487)	(131,758)	-	(132,173)
Total 334-10	69,456	263,395	122,577	385,972	30,588	486,016
334-20						
King Salmon Season 6/19-7/1	15,328	37,639	-	37,639	-	52,967
Fall or Second Season 7/3-8/22	1,453	69,418	51,994	121,412	5,312	128,177
(Before Quota Period 7/3-18)	(1,368)	(69,418)	-	(69,418)	-	(70,786)
(After Quota Period 7/19-8/22)	(85)	-	(51,994)	(51,994)	(5,312)	(57,391)
Total 334-20	16,781	107,057	51,994	159,051	5,312	181,144
334-30						
King Salmon Season 6/22-7/1	3,938	3,459	-	3,459	-	7,397
Fall or Second Season 7/26-8/24	5	-	15,851	15,851	521	16,377
Total 334-30	3,943	3,459	15,851	19,310	521	23,774
Total Lower Yukon	90,180	373,911	190,422	564,333	36,421	690,934
334-40						
King Season 6/27-8/11	959	169,569	----	169,569	----	170,528
Fall Season 8/16-9/1	----	----	13,996	13,996	----	13,996
Total 334-40	959	169,569	13,996	183,565	----	184,524
334-50						
King Season 7/5-7/24	4,266	1,153	----	1,153	----	5,419
Fall Season 8/16-9/10	1	---	25,695	25,695	----	25,696
Total 334-50	4,267	1,153	25,695	26,848	----	31,115
334-60						
King Season 7/11-7/30	1,008	4,325	----	4,325	----	5,333
Fall Season 9/5-9/14	---	---	18,626	18,626	1,284	19,910
Total 334-60	1,008	4,325	18,626	22,951	1,284	25,243
Totals Upper Yukon	6,234	175,047	58,317	233,264	1,284	240,882
Grand Total 334	96,414	548,959	248,739	797,697	37,705	931,816

Table 5. Yukon district commercial salmon catches by statistical area, 1977.

Statistical Area	King Salmon Season 1/ King	King Salmon Season 1/ Chum	Fall Season 2/ King	Fall Season 2/ Chum	Fall Season 2/ Coho	Total King	Total Chum	Total Coho
334-11	10,714	16,634	453	17,511	89	11,167	34,145	89
12	15,289	65,757	1,679	118,978	15,918	16,968	184,735	15,918
13	7,623	13,262	551	40,460	4,956	8,174	53,722	4,956
14	825	950	90	8,710	1,548	915	9,660	1,548
15	15,181	12,091	352	31,253	2,784	15,533	43,344	2,784
16	1,544	875	6	158	0	1,550	1,033	0
17	6,736	4,960	348	35,619	5,267	7,084	40,579	5,267
18	7,833	5,741	232	13,013	26	8,065	18,754	26
Sub Total 334-10	65,745	120,270	3,711	265,702	30,588	69,456	385,972	30,588
334-21	6,339	8,422	241	18,066	224	6,580	26,488	224
22	3,864	20,787	759	55,533	4,896	4,623	76,320	4,896
23	1,962	3,766	151	19,898	188	2,113	23,664	188
24	3,163	4,664	302	27,915	4	3,465	32,579	4
Sub Total 334-20	15,328	37,639	1,453	121,412	5,312	16,781	159,051	5,312
334-31	1,737	1,118	4	11,759	9	1,741	12,877	9
32	2,201	2,341	1	4,092	512	2,202	6,433	512
Sub Total 334-30	3,938	3,459	5	15,851	521	3,943	19,310	521
Total Lower Yukon	85,011	161,368	5,169	402,965	36,421	90,180	564,333	36,421
334-41	305	148,745	0	1,680	0	305	150,425	0
42	654	20,824	0	12,316	0	654	33,140	0
Sub Total 334-40	959	169,569	0	13,996	0	959	183,565	0
334-51	3,983	1,153	1	25,695	0	3,984	26,848	0
52	283	0	0	0	0	283	0	0
Sub Total 334-50	4,266	1,153	1	25,695	0	4,267	26,848	0
334-61	477	2,300	0	3,645	252	477	5,945	252
62	365	1,306	0	11,114	766	365	12,420	766
63	166	719	0	3,867	266	166	4,586	266
Sub Total 334-60	1,008	4,325	0	18,626	1,284	1,008	22,951	1,284
Total Upper Yukon	6,233	175,047	1	58,317	1,284	6,234	233,364	1,284
Grand Total	91,224	336,415	5,170	461,282	37,705	96,414	797,697	37,705

1/ King Salmon Season

334-10: 6/10-7/1
334-20: 6/19-7/1
334-30: 6/22-7/1
334-40: 6/27-8/11
334-50: 7/5-7/24
334-60: 7/11-7/30

2/ Fall Season

334-10: 7/4-8/23
334-20: 7/3-8/22
334-30: 7/26-8/24
334-40: 8/16-9/1
334-50: 8/16-9/10
334-60: 9/5-9/14

Table 6.. Yukon District Licenses Issued By Residence, 1977.

Subdistrict	Residence	Commercial	Fishing Vessel	Set Net	Drift Net	Fishwheel 1/
334-10	Emmonak	116	97	98	29	
	Alakanuk	104	90	93	22	
	Kotlik	92	80	84	20	
	Mountain Village	55	34	32	32	
	Scammon Bay	43	36	36	1	
	Sheldons Point	21	17	16	2	
	Unalakleet	16	9	9	-	
	Pilot Station	14	12	12	11	
	St Marys	14	13	13	11	
	Russian Mission	8	6	6	6	
	Marshall	5	4	4	2	
	Hooper Bay	4	3	3	-	
	Anchorage	4	2	2	-	
	Stebbins	2	2	2	1	
	Bethel	2	2	2	1	
	Shaktoolik	2	1	1	1	
	Newtok	2	-	-	-	
	Tununak	2	-	-	-	
	Chuloonawick	1	1	1	1	
	Paxson	1	1	1	1	
	Palmer	1	1	1	1	
	Chevak	1	-	-	-	
	Holy Cross	1	-	-	-	
	Kalskag	1	-	-	-	
	Nome	1	-	-	-	
	Hoquim, Wash	1	-	-	-	
	Seattle, Wash					
	Subtotal	515	411	416	142	
334-20	Mountain Village	96	63	54	52	
	St. Marys	53	39	23	38	
	Pilot Station	51	36	25	36	
	Marshall	43	29	14	29	
	Pitkas Point	34	16	16	15	
	Russian Mission	3	3	3	3	
	Bethel	2	-	-	-	
	Anchorage	1	1	1	1	
	Subtotal	283	187	136	174	
334-30	Holy Cross	30	14	12	10	
	Marshall	18	15	14	15	
	Russian Mission	15	8	8	3	
	Galena	1	-	-	-	
	Subtotal	64	37	34	28	
	Subtotal Lower Yukon	862	635	586	344	
334-40	Anvik	10	6	4		5
	Grayling	8	5	1		3
	Kaltag	39	18	8		12
	Nulato	19	15	0		15
	Koyukuk	5	5	1		4
	Galena	24	23	3		17
	Ruby	14	13	2		11
	Other	5	5	3		1
	Subtotal	124	90	22		68
334-50	Tanana	24	19	10		15
	Rampart	11	8	7		2
	Fairbanks	10	9	7		2
	Stevens Village	3	3	2		1
	Ft. Yukon	1	1	0		1
	Circle	3	3	2		1
	Eagle	2	2	2		1
	Other	6	6	6		1
	Subtotal	60	51	36		24
334-60	Manley	6	6	1		5
	Nenana	18	11	1		13
	Fairbanks	13	7	2		10
	Other	9	8	2		7
	Subtotal	46	32	6		35
	Subtotal Upper Yukon	230	173	64		127
	Grand Total	1,092	808	650	344	127

1/ No licenses required for fishwheels.

Table 7 . Commercial salmon catches from subdistrict 334-10, Yukon district, drift and set gill nets combined, 1977.

Date of Landing	Hours Fished	No. of Boats	Total catch (catch/boat hour) King	Coho	Chum	Cumulative catch (cum. catch/boat hr.) King	Coho	Chum
6/10	24							
6/11	6		2			2(.06)		
	30	1	2(.06)					
6/13	6		4		16	6		16
6/14	18		35		12	41(.04)		28(.04)
	24	34	39(.05)		28(.04)			
6/16	6		129		13	170		41
6/17	24		1,345		885	1,515		926
6/18	6		1,106		1,109	2,621(.41)		2,035(.32)
	36	157	2,580(.46)		2,007(.36)			
6/20	6		1,590		1,646	4,211		3,681
6/21	18		8,804		23,582	13,015(.92)		27,263(1.92)
	24	321	10,394(1.35)		25,228(3.27)			
6/23	6		3,574		4,305	16,589		31,568
6/24	24		14,029		18,188	30,618		49,756
6/25	6		8,668		9,361	39,286(1.50)		59,117(2.25)
	36	334	26,271(2.18)		31,854(2.65)			
6/27	6		3,274		5,718	42,560		64,835
6/28	18		14,425		25,576	56,985(1.62)		90,411(2.62)
	24	346	17,699(2.13)		31,294(3.77)			
6/30	6		2,025		9,925	59,010		100,336
7/1	18		6,735		19,934	65,745(1.54)		120,270(2.83)
	24	337	8,760(1.08)		29,859(3.69)			
Subtotal 1/	198	392	65,745(1.54)		120,270(2.83)			
7/4	6		543		18,637	543		18,637
7/5	18		1,408		54,625	1,951(.33)		73,262(12.21)
	24	249	1,951(.33)		73,262(12.21)			
7/7	6		219		7,276	2,170		80,538
7/8	24		387		14,712	2,557		95,250
7/9	6		53		2,133	2,610(.17)		97,383(6.32)
	36	261	659(.07)		24,121(2.57)			
7/11	6		75		2,781	2,685		100,164
7/12	18		373		11,993	3,058(.15)		112,157(5.47)
	24	215	448(.09)		14,774(2.86)			
7/14	6		55		5,498	3,113		117,655
7/15	24		183		16,289	3,296		133,944
7/16	6		56		2,272	3,352(.11)		136,216(4.50)
	36	272	294(.03)		24,059(2.46)			
7/18	6		46		4,517	3,398		140,733
7/19	18		141	1	16,887	3,539(.10)	1(+)	157,620(4.37)
	24	240	187(.03)	1(+)	21,404(3.72)			
7/21	6		8		604	3,547	1	158,224
7/22	18		63	2	1,444	3,610(.09)	3(+)	159,668(4.02)
	24	150	71(.02)	2(+)	2,048(.57)			
7/25	6		4	3	2,443	3,614	6	162,111
7/26	18		20	7	7,252	3,634(.08)	13(+)	169,363(3.81)
	24	200	24(.01)	10(+)	9,695(2.02)			
7/28	6		15	8	2,298	3,649	21	171,661
7/29	18		18	49	5,391	3,667(.07)	70(+)	177,052(3.58)
	24	209	33(.01)	57(.01)	7,689(1.53)			
8/1	6		1	11	250	3,668	81	177,302
8/2	18		5	133	799	3,673(.07)	214(.01)	178,101(3.40)
	24	123	6(+)	144(.05)	1,049(.36)			
8/4	6		2	113	998	3,675	327	179,091
8/5	18		7	386	2,185	3,682(.07)	713(.03)	181,276(3.23)
	24	154	9(+)	499(.13)	3,183(.86)			
8/8	6		3	1,899	12,142	3,685	2,612	193,418
8/9	18		5	4,787	39,538	3,690(.06)	7,399(.23)	232,956(3.76)
	24	239	8(+)	6,686(1.16)	51,680(9.00)			
8/11	6		1	633	730	3,691	8,032	233,686
8/12	18		7	686	960	3,698(.06)	8,718(.24)	234,646(3.54)
	24	178	8(+)	1,319(.31)	1,690(.40)			

Table 7 . Commercial salmon catches from subdistrict 334-10, Yukon district, drift and set gill nets combined, 1977 (continued).

Date of Landing	Hours Fished	No. of Boats	Total catch (catch/boat hour) King	Coho	Chum	Cumulative catch (cum. catch/boat hr.) King	Coho	Chum
8/15	6		2	2,516	4,671	3,700	11,234	239,317
8/16	18		3	8,671	14,187	3,703(.05)	19,905(.48)	253,504(3.53)
	24	236	5(+)	11,187(1.98)	18,858(3.33)			
8/18	6			291	446	3,703	20,196	253,950
8/19	18		4	7,125	6,675	3,707(.05)	27,321(.59)	260,625(3.47)
	24	198	4(+)	7,416(1.56)	7,121(1.50)			
8/22	6		1	500	873	3,708	27,821	261,498
8/23	18		3	2,767	4,204	3,711(.05)	30,588(.60)	265,702(3.28)
	24	180	4(+)	3,267(0.76)	5,077(1.18)			
Subtotal 2/	384	337	3,711(.05)	30,588(0.60)	265,702(3.28)			
Grand Total	582	402	69,456	30,588	385,972			

1/ King salmon season (6/10-7/1)

2/ Fall season (7/4-8/23)

Table 8. Commercial salmon catches from subdistrict 334-20, Yukon district, drift and set gill nets combined, 1977.

Date of Landing	Hours Fished	No. of Boats	Total catch (catch/boat hour) King	Coho	Chum	Cumulative catch (cum. catch/boat hr.) King	Coho	Chum
6/19	6							
6/20	18		174		46	174(.12)		46(.03)
	24	59	174(.12)		46(.03)			
6/22	6		337		785	511		831
6/23	24		1,396		3,651	1,907		4,482
6/24	6		1,346		3,334	3,253(.53)		7,816(1.28)
	36	135	3,079(.66)		7,770(1.66)			
6/26	6		1,460		2,562	4,713		10,378
6/27	18		4,860		10,564	9,573(.97)		20,942(2.13)
	24	155	6,320(1.70)		13,126(3.53)			
6/29	6		511		1,292	10,084		22,234
6/30	24		3,055		7,910	13,139		30,144
7/1	6		2,189		7,495	15,328(1.01)		37,639(2.48)
	36	144	5,755(1.11)		16,697(3.22)			
Subtotal [1/]	120	188	15,328(1.01)		37,639,(2.48)			
7/3	6		105		6,409	105		6,409
7/4	18		493		22,891	598(.22)		29,300(10.80)
	24	113	598(.22)		29,300(10.80)			
7/6	6		50		2,742	648		32,042
7/7	24		247		13,091	895		45,133
7/8	6		112		7,222	1,007(.15)		52,355(7.98)
	36	107	409(.11)		23,055(5.99)			
7/10	6		36		1,624	1,043		53,979
7/11	18		105		3,952	1,148(.13)		57,931(6.66)
	24	89	141(.07)		5,576(2.61)			
7/13	6		8		352	1,156		58,283
7/14	24		91		4,615	1,247		62,898
7/15	6		34		2,222	1,281(.11)		65,120(5.4
	36	88	133(.04)		7,189(2.27)			
7/17	6		16		759	1,297		65,879
7/18	18		71		3,539	1,368(.10)		69,418(4.99)
	24	86	87(.04)		4,298(2.09)			
7/20	6		2		250	1,370		69,668
7/21	24		35		3,503	1,405		73,171
7/22	6		12		956	1,417(.08)		74,127(4.37)
	36	84	49(.02)		4,709(1.56)			
7/24	6		7		313	1,424		74,440
7/25	18		0		119	1,424(.08)		74,559(4.21)
	24	31	7(.01)		432(0.58)			
7/27	6		1		2,489	1,425		77,048
7/28	18		17		5,892	1,442(.07)		82,940(4.11)
	24	105	18(.01)		8,381(3.33)			
7/31	6				188	1,442		83,128
8/1	18		4	1	552	1,446(.07)	1(+)	83,680(3.87)
	24	56	4(+)	1(+)	740(0.55)			
8/3	6				8	1,446	1	83,688
8/4	18		1		118	1,447(.07)	1(+)	83,806(3.84)
	24	9	1(+)		126(0.58)			
8/7	6			1	70	1,447	2	83,876
8/8	18		5	17	1,370	1,452(.06)	19(.01)	85,246(3.77)
	24	35	5(.01)	18(.02)	1,440(1.71)			
8/10	6			63	5,987	1,452	82	91,233
8/11	18			1,003	18,757	1,452(.06)	1,085(.20)	109,990(4.31)
	24	122		1,006(.36)	24,744(8.45)			

Table 8. Commercial salmon catches from subdistrict 334-20, Yukon district, drift and set gill nets combined, 1977 (Continued).

Date of Landing	Hours Fished	No. of Boats	Total catch (catch/boat hour) King	Coho	Chum	Cumulative catch (cum. catch/boat hr.) King	Coho	Chum
8/14	6			31	292	1,452	1,116	110,282
8/15	18			256	594	1,452(.05)	1,372(.21)	110,876(4.15)
	24	49		287(.24)	886(0.75)			
8/17	6			353	1,454	1,452	1,752	112,330
8/18	18			2,114	5,919	1,452(.05)	3,839(.44)	118,249(4.08)
	24	95		2,467(1.08)	7,373(3.23)			
8/21	6			195	1,104	1,452	4,034	119,353
8/22	18		1	1,278	2,059	1,453(.05)	5,312(.50)	121,412(3.93)
	24	80	1(+)	1,473(.77)	3,163(1.65)			
Subtotal 2/	396	172	1,453(.05)	5,312(.50)	121,412(3.93)			
Grand Total	516	208	16,781	5,312	159,051			

1/ King salmon season (6/19-7/1)

2/ Fall season (7/3-8/22)

Table 9 . Commercial salmon catches from subdistrict 334-30, Yukon district, drift and set gill nets combined, 1977.

Date of Landing	Hours Fished	No. of Boats	Total catch (catch/boat hour) King	Coho	Chum	Cumulative catch (cum. catch/boat hr.) King	Coho	Chum
6/20	6							
6/21	24							
6/22	18		75			75(.16)		5(.01)
	48	10	75(.16)		5(.01)			
6/23	6		181		49	256		54
6/24	24		427		24	683		78
6/25	18		441		112	1,124(.57)		190(.10)
	48	31	1,049(.70)		185(.12)			
6/27	6		566		438	1,690		628
6/28	24		1,011		1,236	2,701		1,864
6/29	18		735		908	3,436(.99)		2,772(.80)
	48	31	2,312(1.55)		2,582(1.74)			
6/30	6		208		408	3,744		3,180
7/1	6		194		279	3,938(1.08)		3,459(.95)
	12	15	502(2.79)		687(3.82)			
Subtotal 1/	156	46	3,938(1.08)		3,459(.95)			
7/25	6							
7/26	24							
7/27	6		1		5(.14)	1(.03)		5(.14)
	36	1	1(.03)					
7/28	6				157	1		162
7/29	24		1		700	2		862
7/30	6				198	2(+)		1,060(3.27)
	36	8	1(.03)		1,055(3.56)			
8/1	6							1,060
8/2	24				33	2		1,093
8/3	6				11	2		1,104(2.19)
	36	5			44(.24)	2(+)		
8/8	6				18	2		1,122
8/9	24		1	5	124	3	5	1,246
8/10	6			4	148	3(+)	9(.04)	1,394(1.84)
	36	7	1(.03)	9(.04)	290(1.15)			
8/11	6				413	3	9	1,807
8/12	24		1		5,035	4	9	6,842
8/13	6				1,363	4(+)	9(.01)	8,205(5.84)
	36	18	1(.03)		6,811(10.51)			
8/15	6				302	4	9	8,507
8/16	24				1,748	4	9	10,255
8/17	6			62	1,092	4(+)	71(.04)	11,347(4.85)
	36	26		62(.07)	3,142(3.36)			
8/18	6				62	4	71	11,409
8/19	24			67	2,398	4	138	13,807
8/20	6			45	720	4(+)	183(.07)	14,527(4.64)
	36	22		112(.35)	3,180(4.02)			
8/22	6					4	183	14,527
8/23	24			44	787	4	227	15,314
8/24	6		1	294	537	5(+)	521(.17)	15,851(4.36)
	36	14	1(.03)	338(.67)	1,324(2.63)			
Subtotal 2/	288	37	5(.001)	521(.17)	15,851(4.36)			
Grand Total	444	54	3,943	521	19,310			

1/ King salmon season (6/21-7/2).

2/ Fall season (7/25-8/24).

Table 10 Commercial Salmon Catches, Subdistrict 334-40, Yukon District, set gillnet and fishwheel catches combined, 1977.

Period Ending	Fishermen	King	Chum	Coho	Total
07/01	8	45	2,147	0	2,192
07/08	54	216	57,645	0	57,861
07/15	73	459	85,017	0	85,476
07/22	72	203	20,689	0	20,892
07/28	36	36	2,618	0	2,654
08/05	S E A S O	N C L O	S E D	--	--
08/11	16	0	1,453	0	1,453
Subtotals 2/	87	959	169,569	0	170,528
08/18	9	0	1,823	0	1,823
08/25	18	0	7,071	0	7,071
09/01	20	0	5,102	0	5,102
Subtotals 3/	28	0	13,996	0	13,996
GRAND TOTAL	96	959	183,565	0	184,524

1/ King Salmon Season (6/15-8/11).

2/ Fall Season (8/16-9/1).

Table 11 Commercial Salmon Catches, Subdistrict 334-50, Yukon District, set gillnet and fishwheel catches combined, 1977.

Period Ending	Fishermen	King	Chum	Coho	Total
07/10	16	335	0	0	335
07/17	33	2,138	16	0	2,154
07/24	40	1,793	1,137	0	2,930
Subtotals 2/	41	4,266	1,153	0	5,419
07/31	S E A S O N C L O S E D		--	--	--
08/08	S E A S O N C L O S E D		--	--	--
08/15	S E A S O N C L O S E D		--	--	--
08/20	15	0	2,801	0	2,801
08/27	21	1	6,033	0	6,034
09/03	32	0	11,792	0	11,792
09/10	23	0	5,069	0	5,069
Subtotals 3/	34	1	25,695	0	25,696
GRAND TOTAL	53	4,267	26,848	0	31,115

1/ King Salmon Season (6/15-7/24).

2/ Fall Season (8/16-9/10).

Table 12 Commercial Salmon Catches, Subdistrict 334-60 Yukon District set gillnet and fishwheel catches, combined, 1977.

Period Ending	Fishermen	King	Chum	Coho	Total
07/16	9	211	24	0	235
07/23	16	678	1,168	0	1,846
07/30	16	119	3,133	0	3,252
Subtotals 1/	18	1,008	4,325	0	5,333
08/06	S E A S O N C L O S E D		--	--	--
08/13	S E A S O N C L O S E D		--	--	--
08/20	S E A S O N C L O S E D		--	--	--
08/27	S E A S O N C L O S E D		--	--	--
09/03	S E A S O N C L O S E D		--	--	--
09/09	32	--	11,270	514	11,784
09/14	27	--	7,356	770	8,126
Subtotals 2/	32	0	18,626	1,284	19,910
GRAND TOTAL	39	1,008	22,951	1,284	25,243

1/ King Salmon Season (6/15-7/30).

2/ Fall Season (9/5-9/14).

Table 13. YUKON RIVER SUBSISTENCE SALMON CATCH DATA, 1977 (INCLUDES CANADIAN CATCHES) 1/

VILLAGE	SURVEY DATE	FISHING FAMILIES	DOGS 2/	SNOW MACHINES 2/	KINGS	SUMMER CHUMS	FALL CHUMS	COHO	SUBTOTAL	TOTAL ALL SALMON	8½" NETS	5½" NETS	FISHWHEEL
Sheldons Point	08/02	14	50	19	302	842	285	200	1,327	1,629	6	28	0
Alakanuk		50	98	103	213	5,569	634	388	6,591	6,804	35	80	0
Emmonak		37	119	86	62	4,345	2,099	1,057	7,501	7,563	9	53	0
Lamont Slough	08/26	1	5	3	0	25	0	0	25	25	0	3	0
Kotlik	08/08	25	52	39	173	4,278	2,067	807	7,152	7,325	7	28	0
Mt. Village	08/09	40	105	83	172	5,959	3,532	1,877	11,368	11,540	9	48	0
Pitkas Point	08/11	11	35	14	87	2,904	8	576	3,488	3,575	5	13	0
St. Mary's	08/11	24	73	41	489	7,055	1,309	495	8,859	9,348	18	39	0
Pilot Station	08/12	25	128	36	556	4,226	552	930	5,708	6,264	13	36	0
Marshall		24	152	38	364	1,850	588	458	2,896	3,260	11	28	0
Russian Mission		14	46	23	639	1,801	300	161	2,262	2,901	15	11	0
Holy Cross	08/15	20	44	32	1,920	5,041	161	202	5,404	7,324	20	13	0
Anvik	08/17	25	153	27	67	23,394	309	144	23,847	23,914	2	9	8
Grayling	08/19	33	109	32	149	16,275	299	528	17,102	17,284	0	9	11
Kaltag	08/21	22	280	24	216	15,043	329	1,216	16,588	16,804	1	12	14
Nulato	08/25	27	226	21	1,531	9,444	807	1,814	12,065	13,596	2	26	12
Koyukuk	08/24	11	77	9	752	2,752	556	638	3,946	4,698	5	11	2
Galena	10/02	17	136	27	1,155	3,226	2,287	14	5,527	6,682	13	14	15
Ruby	10/01	8	96	4	735	2,204	2,145	0	4,349	5,084	4	4	11
Tanana	10/07	39	309	42	858	8,915	10,282	593	19,790	20,648	10	13	25
Rampart	10/07	16	124	10	1,194	6,327	3,654	75	10,056	11,250	7	6	8
Fairbanks Fish Camp		15	0	0	467	1,568	979	20	2,567	3,034	0	0	3
Stevens Village	10/11	12	66	6	775	1,257	1,080	22	2,359	3,134	9	7	1
Beaver	10/11	7	21	8	299	694	22	0	716	1,015	9	5	0
Fort Yukon	10/11	24	218	25	1,061	6,390	7,224	16	13,630	14,691	4	15	15
Circle	10/12	7	43	6	304	1	132	70	203	507	2	4	4
Eagle	10/12	27	79	22	1,171	888	6,542	2	7,432	8,603	23	20	0
MAIN RIVER TOTALS		575	2,844	780	15,711	142,273	48,182	12,303	202,758	218,409	239	535	129
Huslia	08/23	13	79	15	50	2,949	804	0	3,753	3,803	2	15	0
Hughes	08/23	12	93	6	72	4,081	775	0	4,856	4,928	0	16	0
Alatna	08/23	2	23	2	1	210	0	0	210	211	0	2	0
Allakaket	08/23	16	135	16	172	3,540	146	0	3,686	3,858	0	24	0
KOYUKUK RIVER TOTALS		43	330	39	295	10,780	1,725	0	12,505	12,800	2	57	0

1/ Revised and expanded catch data, 1977.
2/ Upper Yukon fishing families only.

Table 13. YUKON RIVER SUBSISTENCE SALMON CATCH DATA, 1977 (INCLUDES CANADIAN CATCHES) (CONTINUED)

VILLAGE	SURVEY DATE	FISHING FAMILIES	DOGS 2/	SNOW MACHINES 2/	KINGS	SUMMER CHUMS	FALL CHUMS	COHO	SUBTOTAL	TOTAL ALL SALMON	8½" NETS	5½" NETS	FISHWHEEL
Venetie	10/11	5	54	7	0	0	1,660	0	1,660	1,660	1	4	0
CHANDALAR RIVER TOTALS		5	54	7	0	0	1,660	0	1,660	1,660	1	4	0
Manley	09/29	17	357	14	752	3,615	9,966	2,610	16,191	16,943	3	18	10
Nenana	10/05	19	334	20	742	2,716	20,102	1,349	24,167	24,909	5	4	29
Fairbanks 7/		31			81	118	536	71	725	792			8
TANANA RIVER TOTALS		67	691	34	1,575	6,449	30,604	4,030	41,083	42,644	8	22	47
Black River 5/		1	6	0	0	0	600	0	600	600	0	0	0
Old Crow (Y.T.) 6/					29		5,560	32	5,592	5,621			
PORCUPINE RIVER TOTALS		1	6	0	29	0	6,160	32	6,192	6,221	0	0	0
Yukon Territory Villages													
Pelly	---	--	--	--	265	--	650	--	650	915	--	--	--
Mayo-Stewart R.	--	--	--	--	61	--	--	--	--	61	--	--	--
Johnson Crossing (Teslin)	--	--	--	--	800	--	--	--	--	800	--	--	--
Dawson	---	--	--	--	531	--	1,499	--	1,499	531	--	--	--
Carmacks	---	--	--	--	1,121	--	780	--	780	1,901	--	--	--
YUKON TERRITORY VILLAGES TOTAL		--	--	--	2,778	--	2,929	--	2,929	4,208	--	--	--
GRAND TOTAL YUKON RIVER 8/		691	3,925	860	20,388	159,502	91,220	16,365	267,127	287,475	250	618	176

1/ Expanded catch data, 11/77.
2/ Data from fishing families only.
3/ Mostly chum & coho, but small numbers of pink salmon included.
4/ Fishermen from Fairbanks who obtained permits for the area between Hess Creek and Dall River.
5/ Catch from vicinity of Kevinjek Creek confluence.
6/ Data furnished by Environment Canada-Fisheries Service (Whitehorse).
7/ From catch reports turned in by permittees (subsistence fishing permits required for Tanana R. drainage upstream of Wood River).
8/ Does not include catches of 2,520 kings and 34,310 summer chums taken at coastal villages of Scammon Bay, Hooper Bay and Chevak.

Table 14. Aerial survey salmon escapement estimates, 1/ Yukon River drainage, 1977.

Stream (drainage)	Date	Survey Rating	Kings	Cohos	Summer Chums	Fall Chums	Pinks
Archuelinguk (Mt. Village) R.	8/1	Fair-poor	87	-	1,944	-	265
Andreafsky River							
West Fork	7/20	Good	1,499	-	63,120	-	17,200
East Fork	7/20	Good	2,008	-	112,722	-	9,670
			3,507	-	175,842	-	26,870
Anvik River drainage							
Tower Count	6/29-7/26		1,261	-	162,514	-	323
Robinhood Creek	7/16	Good	-	-	400	-	-
Yellow R. to tower	7/16	Good	-	-	12,815	-	-
Yellow River	7/16		32	-	2,970	-	-
Beaver Cr. to Yellow R.	7/16	Good	-	-	26,735	-	-
Beaver Creek	7/16	Good	7	-	30,545	-	-
Beaver Cr to 1977 Weir	7/29		54	-	-	-	-
Below Beaver Creek	7/16	Poor	-	-	25,775	-	-
Subtotal below tower			1,354		100,240		
Total Anvik R. drainage			1,354	-	262,754	-	323
Thompson Creek	7/16	Poor	3	-	1,425	-	-
Rodo River	7/20	Fair	57	-	16,118	-	-
Nulato River (main stem)	7/23	Fair	12	-	15,070	-	-
North Fork	7/23	Fair	274	-	43,205	-	-
South Fork	7/23	Fair	201	-	11,385	-	-
Subtotal			487	-	69,660	-	-
Koyukuk River drainage							
Gisasa River	7/17-28	Poor-fair	255	-	2,204	-	-
Dakli River	7/17	Good	-	-	1,306	-	-
Hogatza River							
Caribou Creek	7/28	Fair	-	-	4,297	-	-
Clear Creek	7/28	Fair	-	-	6,437	-	-
					10,734		
Indian River	8/11	Poor	7	-	50	-	-
South Fork	8/11	Poor	73	-	1,400	-	-
Jim River	8/11	Poor	10	-	12	-	-
			83	-	1,412	-	-
Total Koyukuk drainage			345	-	15,706	-	-
Kala Creek	7/28	Good	1	-	3	-	-
Melozitna River							
Melozi Hot Springs Cr.	7/20	Good	13	-	1,014	-	-
Black Sand Creek	7/20	Good	2	-	75	-	-
Fox Creek	7/20	Good	-	-	41	-	-
			15	-	1,130	-	-
Tozitna River	7/20	Good	123	-	761	-	-
Tanana River drainage							
Kantishna River drainage							
Toklat River	10/10	Poor	-	-	-	15,000	-
Sushana Cr.	10/26	Poor	-	3		7,000	-
Geiger Cr.	10/27	Poor	-	60	-	3,000	-
Subtotal			-	63	-	25,000	-
Nenana River	10/19	Poor	-	524	-	-	-
Seventeen Mile Slough	10/10	Good	-	1,167	-	-	-
Wood Creek	10/10	Good	-	310	-	-	-
Subtotal			-	2,001	-	-	-
Chatanika River	8/4	Good	65	-	-	-	-
Chena River	7/26	Good	563	-	610	-	-
Piledriver Slough	8/13	Fair	1	-	1	-	-
Salcha River	8/3	Fair	1,202	-	677	-	-

Total Utilization								
Alaska			Yukon Territory			Total		
KING	OTHER SALMON	TOTAL	KING	OTHER SALMON	TOTAL	KING	OTHER SALMON	TOTAL
					4,666			4,666
					7,000			7,000
					9,238			9,238
					12,133			12,133
					12,573			12,573
					10,466			10,466
					9,566			9,566
12,239	1,500,065	1,512,304			7,066	12,239	1,500,065	1,519,370
104,822	738,790				1,800	104,822	740,590	845,412
78,467	1,015,655	1,843,612			12,000	78,467	1,015,655	1,106,122
69,646	112,098	181,244			12,840	69,646	112,098	192,584
31,825	330,000	361,825			2,420	31,825	330,000	364,245
30,893	435,000	465,893			1,833	30,893	435,000	467,726
27,375	1,130,000	1,157,375			4,560	27,375	1,130,000	1,161,935
15,000	259,000	274,000			3,900	15,000	259,000	277,900
20,500	555,000	575,500			4,373	20,500	555,000	579,873
	520,000	520,000			5,366		520,000	525,366
	670,000	670,000			5,733		670,000	675,733
	537,000	537,000			5,226		537,000	542,226
	633,000	633,000			3,660		633,000	636,660
26,693	565,000	591,693			3,473	26,693	565,000	595,166
27,899	1,092,000	1,119,899			4,200	27,399	1,092,000	1,124,099
28,779	603,000	631,779			3,333	28,779	603,000	635,112
23,365	474,000	497,365			2,000	23,365	474,000	499,365
27,665	537,000	564,665			3,466	27,665	537,000	568,131
43,713	560,000	603,713			3,400	43,713	560,000	607,113
12,154	346,000	358,154			3,746	12,154	346,000	361,900
32,971	340,450	373,421			860	32,971	340,450	374,281
28,037	327,650	355,687			720	28,037	327,650	356,407
32,453	1,029,000	1,061,453			1,153	32,453	1,029,000	1,062,606
47,608	438,000	485,608			2,806	47,608	438,000	488,414
22,487	197,000	219,487			713	22,487	197,000	220,200
27,650	200,000	227,650			609	27,650	200,000	228,259
14,232		14,232			966	14,232		15,218
19,727		19,727			1,333	19,727		21,060
22,782		22,782			353	22,782		23,135
54,026		54,026			120	54,026		54,146
33,842		33,842				33,842		33,842
36,379		36,379				36,379		36,379
41,808		41,808				41,808		41,808
56,278		56,278				56,278		56,278
38,637	10,868	49,505				38,637	10,868	49,505
58,859	385,977	444,836				58,859	385,977	444,836
64,545	14,375	78,920				64,545	14,375	78,920
55,925		55,925				55,925		55,925
62,208	10,743	72,951				62,208	10,743	72,951
63,623		63,623				63,623		63,623
75,625	337,500	413,125	11,000	1,500	12,500	86,625	339,000	425,625
78,370		78,370	8,434	3,098	11,532	86,304	3,098	89,902
67,597		67,597	11,050	13,922	24,972	78,647	13,922	92,569
141,748	452,521	594,269	13,822	9,078	22,900	155,570	461,599	617,169
105,244	425,227	531,071	14,537	10,236	24,773	120,381	435,463	555,844
141,856	401,697	543,553	10,931	27,692	38,083	152,247	429,389	581,636
109,818	492,233	602,051	9,854	6,110	15,964	119,672	498,343	618,015
134,706	472,798	607,504	5,380	11,871	17,251	140,086	484,669	624,755
104,887	296,310	401,197	4,642	11,757	16,399	109,529	308,067	417,596
146,154	335,477	481,631	5,400	16,943	22,343	151,554	352,420	503,974
118,632	259,205	377,837	5,112	11,535	16,647	123,744	270,740	394,484
104,223	415,095	519,318	2,640	7,779	10,419	106,863	422,874	529,737
94,143	580,974	675,117	4,711	3,679	8,390	98,854	584,653	683,507
136,191	530,536	666,727	5,978	15,761	21,739	142,169	546,297	688,466
113,098	454,085	567,183	3,426	10,532	13,958	116,524	464,617	581,141
99,670	769,358	869,028	3,987	9,166	13,153	103,657	778,524	882,181
117,883	1,217,070	1,334,953	5,593	11,646	17,239	123,476	1,228,716	1,352,192
76,785	1,285,684	1,362,469	6,000	20,600	26,600	82,785	1,306,284	1,389,069
106,477	1,025,905	1,132,382	5,000	4,425	9,425	111,477	1,030,330	1,141,807
113,995	1,094,008	1,208,003	7,427	12,511	19,938	121,422	1,106,519	1,227,941

Subsistence Catch								
Alaska 1/			Yukon Territory			Totals		
KING	OTHER SALMON 2/	TOTAL	KING	OTHER SALMON	TOTAL	KING	OTHER SALMON	TOTAL
	1,400,000	1,400,000					1,400,000	1,400,000
	269,000	269,000					269,000	269,000
20,000	860,000	880,000				20,000	860,000	880,000
15,000	330,000	345,000				15,000	330,000	345,000
17,500	435,000	452,500				17,500	435,000	452,000
	1,130,000	1,130,000					1,130,000	1,130,000
15,000	259,000	274,000				15,000	259,000	274,000
20,500	555,000	575,500				20,500	555,000	575,500
	520,000	520,000					520,000	520,000
	670,000	670,000					670,000	670,000
	537,000	537,000					537,000	537,000
	633,000	633,000					633,000	633,000
26,693	565,000	591,693				26,693	565,000	591,693
23,160	1,092,000	1,115,160				23,160	1,092,000	1,115,160
19,950	603,000	622,950				19,950	603,000	622,950
	474,000	474,000					474,000	474,000
20,400	537,000	557,400				20,400	537,000	557,400
22,750	560,000	582,750				22,750	560,000	582,750
5,528	346,000	351,528				5,528	346,000	351,528
19,244	340,450	359,694				19,244	340,450	359,694
18,050	327,650	345,700				18,050	327,650	345,700
14,400	1,029,999	1,043,400				14,400	1,029,000	1,043,400
17,703	438,000	455,703				17,703	438,000	455,703
	197,000	197,000					197,000	197,000
	200,000	200,000					200,000	200,000
	380,000	380,000					380,000	380,000
11,890	337,500	349,390	8,000		8,000	19,890	337,500	357,390
			5,957	2,000 3/	7,957	5,957	2,000	7,957
			6,965	8,429	15,394	6,965	8,429	15,394
21,488	407,069	428,577	10,376	5,800	16,176	31,864	412,889	444,753
11,110	349,141	360,251	10,500	9,300	19,800	21,610	358,441	380,051
24,862	396,125	420,987	8,108	25,500	33,608	32,970	421,625	454,595
16,231	481,440	497,671	6,646	4,181	10,827	22,877	485,621	508,498
16,608	449,131	465,739	3,115	9,800	12,915	19,723	458,931	478,654
11,572	206,011	217,583	2,700	8,600	11,300	14,272	214,611	228,883
16,448	274,977	291,425	3,213	13,600	16,813	19,661	288,577	308,238
12,106	178,507	198,613	2,900	11,100	14,000	15,006	189,607	204,613
14,000	208,254	222,254	1,000	5,500	6,500	15,000	213,754	228,754
13,874	222,005	235,879	2,100	1,200	3,300	15,974	223,205	239,179
25,684	228,649	254,333	2,800	14,000	16,800	28,044	228,749	256,793
20,258	144,008	164,266	1,647	8,000	9,647	21,868	151,008	172,876
24,317	214,682	238,999	2,116	6,938	9,054	26,433	221,620	248,053
19,964	321,587	341,551	3,379	8,636	12,015	23,343	330,223	353,566
13,045	298,479	311,524	3,000	18,100	21,100	15,645	311,979	327,624
17,806	259,199	277,005	1,523	3,425	4,948	19,329	262,624	281,953
17,581	258,606	276,147	2,307	8,521	11,328	20,388	267,127	287,515

Table 14. Aerial survey salmon escapement estimates, 1/ Yukon River drainage, 1977 (Continued

Stream (drainage)	Date	Survey Rating	Kings	Cohos	Summer Chums	Fall Chums	Pinks
Flat Creek	8/17	Poor	-	-	160	-	-
Ninety-eight Cr.	8/17	Good	-	-	2	-	-
Subtotal	8/17		1,202	-	839	-	-
Goodpaster River	8/3	Good	29	-	-	-	-
Upper Tanana R. drainage							
Benchmark #735 Slough	11/4	Good	-	-	-	1,270	-
Richardson Clearwater	10/21	Fair	-	327	-	-	-
Delta River	10/21-11/1	Fair-Good	-	37	-	17,925	-
Tanana River Bridge to Island	11/4	Fair	-	-	-	3,325	-
Bluff Cabin Slough	11/4	Good	-	-	-	6,491	-
Clearwater lake & Outlet 4/ 5/	10/25	Fair	-	730	-	-	-
Delta Clearwater R. 4/ 5/	10/25	Fair	-	4,793	-	-	-
Delta Clearwater Slough (One mile slough)	10/21	Good	-	-	-	1,900	-
Subtotal Upper Tanana Dr.			-	5,887	-	30,911	-
Subtotal Tanana R. Drainage			1,860	7,951	1,450	55,911	-
Chandalar River	10/6	Good	-	-	-	4,183	-
Porcupine River drainage							
Sheenjek River	9/30	Fair	-	-	-	20,506	-
Black River Fish Hole Cr. (tributary of Kevinjek Cr.)	10/3	Poor	-	-	-	200	-
Fishing Branch R (Y.T.)	10/9	Good	-	-	-	32,500	-
Subtotal Porcupine R. drainage			-	-	-	53,206	-
Yukon Territory Streams							
Kluane River 2/ 3/	10/25	Poor	-	-	-	105	-
Quill Creek 2/	10/18	Poor	-	-	-	49	-
Sweed Johnson Cr.	10/18	Good	-	-	-	736	-
			-	-	-	890	-
Tatchun Creek 2/ 3/	8/30		150	-	-	-	-
Little Salmon R. (includes partial boat survey)	8/24-25	Fair	265	-	-	-	-
Big Salmon River	8/25	Good	316	-	-	-	-
Nordenskjold R.	8/25	Poor	4	-	-	-	-
Takhini River	8/22	Poor	88	-	-	-	-
Nisutlin River	8/25		77	-	-	-	-
Subtotal			904	-	-	890	
TOTAL YUKON RIVER DRAINAGE			8,742	7,951	546,793	114,190	27,458

1/ Only peak estimates listed; carcasses included.

2/ Foot survey.

3/ Data supplied by Environment Canada - Fisheries Service, Whitehorse.

4/ Boat survey.

5/ Data furnished by Division of Sport Fish.

Appendix Table 1. Yukon River drainage commercial and subsistence salmon catches.

	Commercial Catch										
	Alaska				Yukon Territory			Total			
YEAR	KING	COHO	CHUM	TOTAL	KING	CHUM	TOTAL	KING	COHO	CHUM	TOTAL
1903							4,666 8/				4,666
1904											
1905											
1906											
1907											
1908							7,000				7,000
1909							9,238				9,238
1910											
1911											
1912											
1913							12,133				12,133
1914							12,573				12,573
1915							10,466				10,466
1916							9,566				9,566
1917											
1918	12,239	26,144	73,921	112,304			7,066	12,239	26,144	73,921	119,370
1919	104,822	37,070	327,898	469,790			1,800	104,822	37,070	327,898	471,590
1920	58,467		155,655	214,122			12,000	58,467		155,655	226,122
1921	69,646	1,000	111,098	181,744			10,840	69,646	1,000	111,098	192,584
1922	16,825			16,825			2,420	16,825			19,245
1923	13,393			13,393			1,833	13,393			15,226
1924	27,375			27,375			4,560	27,375			31,935
1925							3,900				3,900
1926							4,373				4,373
1927							5,366				5,366
1928							5,733				5,733
1929							5,266				5,266
1930							3,660				3,660
1931							3,473				3,473
1932	4,739			4,739			4,200	4,739			8,939
1933	8,829			8,829			3,333	8,829			12,162
1934	25,365			25,365			2,000	25,365			27,365
1935	7,265			7,265			3,466	7,265			10,731
1936	20,963			20,963			3,400	20,963			24,363
1937	6,226			6,226			3,746	6,226			9,972
1938	13,727			13,727			860	13,727			14,587
1939	9,987			9,987			720	9,987			10,707
1940	18,053			18,053			1,153	18,053			19,206
1941	29,905			29,905			2,806	29,905			32,711
1942	22,487			22,487			713	22,487			23,200
1943	27,650			27,650			609	27,650			28,259
1944	14,232			14,232			986	14,232			15,218
1945	19,727			19,727			1,333	19,727			21,060
1946	22,782			22,782			353	22,782			23,135
1947	54,026			54,026			120	54,026			54,146
1948	33,842			33,842				33,842			33,842
1949	36,379			36,379				36,379			36,379
1950	41,808			41,808				41,808			41,808
1951 3/	56,278			56,278				56,278			56,278
1952	38,637	10,868		49,505				38,637	10,868		49,505
1953	58,859		5,977	64,836				58,859		5,977	64,836
1954	64,545		14,375 4/	78,920				64,545		14,375	78,920
1955	55,925			55,925				55,925			55,925
1956	62,208	1	10,742 5/	72,951				62,208	1	10,742	72,951
1957	63,623			63,623				63,623			63,623
1958	63,375			63,375	3,000	1,500	4,500 7/	66,735		1,500	68,235
1959	78,370			78,370	2,477	1,098	3,575	80,847		1,098	81,945
1960 6/	67,597			67,597	4,085	5,493	9,578	71,682		5,493	77,175
1961	120,260	2,855	42,577 5/	165,692	3,446	3,278	6,724	123,706	2,855	45,885	172,416
1962	94,734	22,926	53,160 5/	170,820	4,037	936	4,973	98,771	22,926	54,096	175,793
1963	116,994	5,572 5/		122,566	2,283	2,192	4,475	119,277	5,572	2,192	127,041
1964	93,587	2,446	8,347	104,380	3,208	1,929	5,137	96,795	2,446	10,276	109,517
1965	118,098	350	23,317	141,765	2,265	2,071	4,336	120,363	350	25,388	146,101
1966	93,315	19,254	71,045 5/	183,614	1,942	3,157	5,099	95,257	19,254	74,202	188,713
1967	129,706	11,047	49,453 5/	190,205	2,187	3,343	5,530	131,893	11,047	52,796	195,736
1968	106,526	13,303	67,397 5/	187,224	2,212	435	2,647	108,732	13,303	67,830	189,871
1969	90,223	14,981	191,860 5/	297,064	1,640	2,279	3,919	91,863	14,981	194,139	300,983
1970	80,269	12,245	356,724 5/	439,238	2,611	2,479	5,090	82,880	12,245	349,203	444,328
1971	110,507	12,203	289,684 5/	412,394	3,178	1,761	4,939	113,685	12,203	291,445	417,333
1972	92,840	22,233	287,844	402,917	1,769	2,532	4,301	94,609	22,233	299,376	407,218
1973	75,353	36,641	518,035 4/	640,029	1,871	2,228	4,099	77,224	36,641	520,263	634,128
1974	97,919	16,240	879,243	993,402	2,214	3,010	5,224	100,133	16,240	882,253	998,626
1975	63,740	2,346	984,859	1,050,945	3,000	2,500	5,500	66,740	2,346	987,359	1,056,445
1976	88,671	5,197	761,509	855,377	3,500	1,000	4,500	92,171	5,197	762,509	859,877
1977	96,414	37,705	797,697	931,816	4,620	3,990	8,610	101,034	37,705	801,687	940,426

1/ Does not include subsistence catches from the villages outside of the Yukon River mouth.
2/ Mostly chum salmon, but includes small numbers of pink and coho salmon.
3/ Data source for Alaska commercial catches: USFWS Stat. Digest No. 50 for the years 1951-59, unless otherwise indicated.
4/ Data source: Alaska Fisheries and Fur-Seal Industry Report for 1954. 5/ Includes small numbers of pink or red salmon (less than 300).
6/ Data source for Alaska commercial catches: ADF&G Stat. Leaflets for years since 1960.
7/ Data source: Environment Canada, Fisheries Service (Whitehorse) since 1958.
8/ Catch data for years 1903-1947 obtained by dividing total poundage of mixed salmon by an arbitrary weight of 15 lbs. Species breakdown is unknown. Figures are considered conservative (data collected by Royal Canadian Mounted Police).

Appendix Table 2. Commercial salmon catches by species and subdistricts, Yukon district, 1960-1977.

KING SALMON

Year	Lower Yukon Area 334-10	334-20	334-30	Subtotals	Upper Yukon Area 334-40	334-50	334-60	Subtotals	Totals
1960	50,713	15,994	-	66,707	-	-	-	884	67,591
1961	84,463	29,028	4,965	118,456	-	-	-	1,804	120,260
1962	67,099	22,224	4,687	94,010	-	-	-	724	94,734
1963	85,004	24,211	6,976	116,191	-	-	-	803	116,994
1964	67,555	20,246	4,705	92,506	-	-	-	1,081	93,587
1965	89,268	23,763	3,204	116,235	-	-	-	1,863	118,098
1966	70,788	16,927	3,612	91,327	-	-	-	1,988	93,315
1967	104,350	20,289	3,618	128,257	-	-	-	1,449	129,706
1968	79,465	21,392	4,543	105,400	-	-	-	1,126	106,526
1969	70,862	14,799	3,577	89,238	-	-	-	985	90,223
1970	57,681	17,210	3,712	78,603	-	-	-	1,666	80,269
1971	86,042	19,226	3,490	108,758	-	-	-	1,749	110,507
1972	70,052	17,855	3,841	91,748	-	-	-	1,092	92,840
1973	56,981	13,859	3,204	74,044	-	-	-	1,309	75,353
1974	71,680	17,947	3,471	93,098	685	2,663	1,473	4,821	97,919
1975	44,585	11,187	4,207	59,979	389	2,872	500	3,761	63,740
1976	62,632	17,413	4,239	84,284	385	2,900	1,102	4,387	88,671
1977	69,456	16,781	3,943	90,180	959	4,267	1,008	6,234	96,414

COHO SALMON

Year	Lower Yukon Area 334-10	334-20	334-30	Subtotals	Upper Yukon Area 334-40	334-50	334-60	Subtotals	Totals
1960	-	-	-	-	-	-	-	-	-
1961	2,855	-	-	2,855	-	-	-	-	2,855
1962	22,926	-	-	22,926	-	-	-	-	22,926
1963	5,572 1/	-	-	5,572	-	-	-	-	5,572
1964	2,446	-	-	2,446	-	-	-	-	2,446
1965	350	-	-	350	-	-	-	-	350
1966	19,254	-	-	19,254	-	-	-	-	19,254
1967	9,925	-	1,122	11,047	-	-	-	-	11,047
1968	13,153	-	150	13,303	-	-	-	-	13,303
1969	14,041	-	845	14,886	-	-	-	95	14,981
1970	12,245	-	-	12,245	-	-	-	-	12,245
1971	12,165	-	-	12,165	-	-	-	38	12,203
1972	21,705	506	-	22,211	-	-	-	22	22,233
1973	34,860	1,781	-	36,641	-	-	-	-	36,641
1974	13,728	176	-	13,904	-	909	1,427	2,336	16,240
1975	2,288	-	-	2,288	-	5	53	58	2,346
1976	4,084	17	-	4,101	-	-	1,096	1,096	5,197
1977	30,588	5,312	521	36,421	-	-	1,284	1,284	37,705

CHUM SALMON

Year	Lower Yukon Area 334-10	334-20	334-30	Subtotals	Upper Yukon Area 334-40	334-50	334-60	Subtotals	Totals
1960	-	-	-	-	-	-	-	-	-
1961	42,577[1/]	-	-	42,577	-	-	-	-	42,577
1962	53,160[1/]	-	-	53,160	-	-	-	-	53,160
1963	-	-	-	-	-	-	-	-	-
1964	8,347	-	-	8,347	-	-	-	-	8,347
1965	22,936	-	-	22,936	-	-	-	381	23,317
1966	69,836	-	1,209	71,045	-	-	-	-	71,045
1967	46,148	1,425	1,880	49,453	-	-	-	-	49,453
1968	62,852[1/]	1,407	3,136	67,395	-	-	-	-	67,395
1969	184,411	5,024	1,722	191,157	-	-	-	703	191,860
1970	320,138	22,394	3,285	346,357	-	-	-	907	346,724
1971	282,461	6,112	50	288,623	-	-	-	1,061	289,684
1972	250,945	33,805	1,840	286,590	-	-	-	1,254	287,844
1973	395,431[1/]	109,138[1/]	463	505,032	-	-	-	13,003	518,035
1974	641,663	127,644	2,273	771,580	37,079	30,382	40,202	107,663	879,243
1975	576,607	150,259	5,590	732,456	178,720	40,209	33,474	252,403	984,859
1976	382,216	120,959	14,504	517,679	213,019	6,247	24,564	243,830	761,509
1977	385,972	159,051	19,310	564,333	183,565	26,848	22,951	233,364	797,697

TOTAL SALMON

Year	Lower Yukon Area 334-10	334-20	334-30	Subtotals	Upper Yukon Area 334-40	334-50	334-60	Subtotals	Totals
1960	50,713	15,994	-	66,707	-	-	-	884	67,591
1961	129,895	29,028	4,965	163,888	-	-	-	1,804	165,692
1962	143,185	22,224	4,687	170,096	-	-	-	724	170,820
1963	90,576	24,211	6,976	121,763	-	-	-	803	122,566
1964	78,348	20,246	4,705	103,299	-	-	-	1,081	104,380
1965	112,554	23,763	3,204	139,521	-	-	-	2,244	141,765
1966	159,878	16,927	4,821	181,626	-	-	-	1,988	183,614
1967	160,423	21,714	6,620	188,757	-	-	-	1,449	190,206
1968	155,470	22,799	7,829	186,098	-	-	-	1,126	187,224
1969	269,314	19,823	6,144	295,281	-	-	-	1,783	297,064
1970	390,064	39,604	6,997	436,665	-	-	-	2,573	439,238
1971	380,668	25,338	3,540	409,546	-	-	-	2,848	412,394
1972	342,702	52,166	5,681	400,549	-	-	-	2,368	402,917
1973	487,272[1/]	124,778[1/]	3,667	615,717	-	-	-	14,312	630,029
1974	727,071	145,767	5,774	875,034	37,764	33,954	43,102	116,061	993,402
1975	623,480	161,446	9,797	794,723	179,109	43,086	34,027	256,222	1,050,945
1976	448,932	138,389	18,743	606,064	213,404	9,147	26,762	249,313	855,377
1977	486,016	181,144	23,744	690,934	184,524	31,115	25,243	240,882	931,816

1/ Includes small numbers of pink or red salmon.

Appendix Table 3. Yukon district commercial, vessel and gill net licenses issued and numbers of fishwheels operated by subdistrict, 1960-1977

COMMERCIAL

Year	Lower Yukon Area 1/ 334-10	334-20	334-30	Subtotals	Upper Yukon Area 334-40	334-50	334-60	Subtotals	Totals
1960	193	96		289				18	307
1961	238	130	26	394				18	412
1962	321	148	46	515				21	536
1963	285	131	30	446				6	452
1964	319	119	31	469				20	489
1965	327	143	34	504				38	542
1966	393	143	21	557				21	578
1967									607
1968				563				22	585
1969	406	131	32	569				30	599
1970	393	164	33	590				38	628
1971	459	162	37	658				57	715
1972	473	193	43	709				56	765
1973	515	206	50	771				101	872
1974	460	232	55	747	39	45	69	153	900
1975	553	243	51	847	159	100	84	343	1,190
1976	599	299	56	954	120	84	71	275	1,229
1977	515	283	64	862	124	60	46	230	1,092

FISHING VESSEL

Year	Lower Yukon Area 1/ 334-10	334-20	334-30	Subtotals	Upper Yukon Area 334-40	334-50	334-60	Subtotals	Totals
1960	186	33		219				10	229
1961	210	112	18	340				10	350
1962	320	127	31	478				12	490
1963	272	113	22	407				6	413
1964	314	101	24	439				13	452
1965	322	111	26	459				28	487
1966	365	113	18	496				21	517
1967	381	126	22	529				20	549
1968	340	124	26	490				22	512
1969	361	93	24	478				25	503
1970	349	143	27	519				30	549
1971	416	145	29	590				44	634
1972	426	153	35	614				47	661
1973	458	167	38	663				77	740
1974	430	189	42	661	30	34	46	110	771
1975	511	197	36	744	116	77	51	244	988
1976	513	203	36	752	92	70	48	210	962
1977	411	187	37	635	90	51	32	173	808

SET GILL NETS

Year	Lower Yukon Area 1/ 334-10	334-20	334-30	Subtotals	Upper Yukon Area 334-40	334-50	334-60	Subtotals	Totals
1960	183	59		242				2	244
1961	217	101	19	337				1	338
1962	303	117	14	434				4	438
1963	259	101	21	381				4	385
1964	277	100	28	405				12	417
1965	292	98	23	413				13	426
1966	345	101	17	463				12	475
1967	333	72	21	426				5	431
1968	314	62	26	402				18	420
1969	346	62	15	423				16	439
1970	345	105	24	474				27	501
1971	399	115	30	544				27	571
1972	439	130	36	605				30	635
1973	450	159	30	639				41	680
1974	423	158	36	617	13	27	27	67	684
1975	506	161	33	700	54	65	21	140	840
1976	480	153	28	661	31	50	19	100	761
1977	416	136	34	586	22	36	6	64	650

DRIFT GILL NETS

Year	Lower Yukon Area 1/ 334-10	334-20	334-30	Subtotals	Upper Yukon Area 334-40	334-50	334-60	Subtotals	Totals
1960	2	44		46					46
1961	17	86		103					103
1962	55	98	24	177					177
1963	24	85	5	114					114
1964	65	89	5	159					159
1965	62	98	4	164					164
1966	97	88	4	189					189
1967	135	109	5	249					249
1968	111	104	8	223					223
1969	142	100	10	252					252
1970	110	127	16	253				1	254
1971	140	134	19	293				2	295
1972	155	142	17	314				5	319
1973	165	151	18	334				1	335
1974	109	168	21	298					298
1975	117	181	13	311					311
1976	166	193	22	381					381
1977	142	174	28	344					344

FISHWHEELS 2/

Year	Lower Yukon Area 1/ 334-10	334-20	334-30	Subtotals	Upper Yukon Area 334-40	334-50	334-60	Subtotals	Totals
1960									
1961									
1962								13	13
1963								3	3
1964								7	7
1965								29	29
1966								17	17
1967									
1968								18	18
1969								15	15
1970								17	17
1971								26	26
1972								26	26
1973			4 3/	4				57	61
1974					24	23	38	85	85
1975		1	4	5	98	32	39	169	174
1976					78	47	44	169	169
1977					68	24	35	127	127

1/ Distribution of licenses by subdistrict represents that at the beginning of the fishing season (June 1); some fishermen transfer to other subdistricts during the season.

2/ Fishwheels are legal types of gear but license fees are not required. Number of fishwheels operated each year obtained from commercial and fishing vessel license application forms where fishermen indicated type of gear to be operated.

3/ Fishwheels were operated in the vicinity of Kaltag and Nulato. Beginning in 1974, these villages are in subdistrict 334-40.

Appendix Table 4 . Actual number of commercial salmon fishing vessels by subdistrict, Yukon district, 1971-1977 1/

KING SALMON SEASON

Year	Lower Yukon Area 334-10	334-20	334-30	Subtotals	Upper Yukon Area 334-40	334-50	334-60	Subtotals	Total
1971	405	154	33	592	---	---	---	---	---
1972	426	153	35	614	---	---	---	---	---
1973	438	167	38	643	---	---	---	---	---
1974	396	154	42	592	27	31	20	78	670
1975	441	149	37	627	93	52	36	181	808
1976	453	189	42	684	80	46	29	155	839
1977	392	188	46	626	87	41	18	146	772

FALL SEASON

Year	Lower Yukon Area 334-10	334-20	334-30	Subtotals	Upper Yukon Area 334-40	334-50	334-60	Subtotals	Total
1971	352	---	---	352	---	---	---	---	---
1972	353	75	3	431	---	---	---	---	---
1973	445	183	---	628	---	---	---	---	---
1974	322	121	6	449	17	23	22	62	511
1975	428	185	12	625	44	33	33	110	735
1976	422	194	28	644	18	36	44	98	742
1977	337	172	37	546	28	34	32	94	640

COMBINED SEASONS

Year	Lower Yukon Area 334-10	334-20	334-30	Subtotals	Upper Yukon Area 334-40	334-50	334-60	Subtotals	Total
1971	473	154	33	660	---	---	---	27	687
1972	476	153	35	664	---	---	---	2/	664
1973	529	205	38	772	---	---	---	47	819
1974	485	190	42	717	28	43	27	98	815
1975	491	197	39	727	95	57	46	198	925
1976	482	220	44	746	96	62	56	214	960
1977	402	208	54	664	96	53	39	188	852

1/ Actual number of fishing vessels refer to those boats which made at least one delivery. Data presented shows the number of vessels that operated in each subdistrict. Some individual fishing vessels in the lower Yukon area may have operated in more than one subdistrict during the year.

Appendix Table 5. Comparative commercial king salmon catch data, Yukon district, 1960-1977 1/

	Year	334-10	334-20	Sub-total (10+20)	334-30
Commercial Catch	1960	50,713	15,994	66,707	
	1961	84,406	29,028	113,434	4,965
	1962	67,072	22,224	89,296	4,687
	1963	85,004	24,211	109,215	6,976
	1964	67,555	20,246	87,801	4,705
	1965	89,268	23,763	113,031	3,204
	1966	70,783	16,927	87,710	3,612
	1967	104,335	20,289	124,624	3,618
	1968	79,465	21,392	100,857	4,543
	1969	70,588	14,799	85,387	3,577
	1970	57,502	17,210	74,712	3,712
	1971	84,397	19,226	103,623	3,490
	1972	68,059	17,317	85,376	3,841
	1973	52,790	12,479	65,269	3,204
	1974	69,457	17,464	86,921	3,413
	1975	41,550	9,064	50,614	4,177
	1976	56,392	15,296	71,688	4,070
	1977	65,745	15,328	81,073	3,938

	Year	334-10	334-20	Sub-total (10+20)	334-30
Boat Hours (Catch per boat hour)	1960	40,848 (1.24)	34,914 (0.46)	75,762 (0.88)	
	1961	79,224 (1.07)	29,118 (1.00)	108,342 (1.05)	2,808 (1.77)
	1962	84,792 (0.79)	38,118 (0.58)	122,910 (0.73)	2,520 (1.86)
	1963	72,288 (1.18)	27,672 (0.87)	99,960 (1.09)	5,616 (1.24)
	1964	56,736 (1.19)	22,398 (0.91)	79,134 (1.11)	4,596 (1.02)
	1965	78,096 (1.14)	31,008 (0.77)	109,104 (1.04)	2,286 (1.40)
	1966	69,894 (1.01)	22,380 (0.76)	92,274 (0.95)	1,782 (1.23) 2/
	1967	102,456 (1.02)	37,488 (0.54)	139,944 (0.89)	4,050 (0.89)
	1968	92,450 (0.86)	32,280 (0.66)	124,730 (0.81)	3,745 (1.21)
	1969	84,864 (0.83)	27,828 (0.53)	112,692 (0.76)	3,577 (0.72)
	1970	61,260 (0.94)	20,460 (0.84)	81,720 (0.91)	3,566 (1.04)
	1971	73,272 (1.15)	19,956 (0.96)	93,228 (1.11)	4,790 (0.73)
	1972	79,236 (0.86)	19,872 (0.87)	99,108 (0.86)	5,916 (0.65)
	1973	75,036 (0.70)	23,496 (0.53)	98,532 (0.66)	7,282 (0.44)
	1974	86,256 (0.80)	29,808 (0.60)	116,064 (0.75)	7,032 (0.49)
	1975	49,944 (0.83)	8,376 (1.08)	58,320 (0.87)	3,552 (1.18)
	1976	64,572 (0.87)	23,484 (0.65)	88,150 (0.81)	4,392 (0.92)
	1977	42,618 (1.54)	15,180 (1.01)	57,798 (1.40)	3,636 (1.08)

1/ 334-10 and 334-20 data are only for the king salmon season (June & early July).
2/ Catch per vessel hour does not include 1,421 king salmon captured by an unknown number of fishermen.

Appendix Table 6 . Comparative King Salmon commercial catch data by date, Kingsalmon season, subdistrict 334-10, Yukon District, 1961-1977.

Cumulative catch 1/ (Cumulative catch /boat hour) 2/

Date	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
6/1																	
6/2							4.4(0.41)										
6/3																	
6/4									3.8(0.42)								
6/5			0.7(0.26)					0.1(0.05)						3.5(0.46)			
6/6										0.01(0.03)			0.3(0.15)				
6/7							21.3(0.85)		8.1(0.34)					11.0(0.60)			
6/8	3.6(0.32)		4.7(0.45)					1.4(0.10)					2.8(0.25)				
6/9					0.6(0.17)							0.04(0.08)			0.2(0.09)		
6/10							37.9(0.90)			0.5(0.16)				25.7(0.82)			
6/11						0.6(0.16)			26.0(0.75)				9.4(0.44)		0.6(0.11)		0.04(0.05)
6/12			16.9(0.87)		4.1(0.31)			11.3(0.62)		3.0(0.32)	0.03(0.15)	1.04(0.17)		36.8(0.84)		0.1(0.06)	
6/13													21.5(0.59)		1.7(0.17)		2.6(0.41)
6/14		0.0(0.57)					62.7(1.18)		41.7(0.79)			4.5(0.24)		55.6(0.99)		3.3(0.27)	
6/15	46.6(1.61)		34.3(1.14)			4.8(0.38)		25.7(0.76)			1.2(0.29)		30.6(0.65)		7.4(0.39)		13.0(0.92)
6/16					19.3(0.85)					8.4(0.48)		21.5(0.68)		58.5(0.96)		12.9(0.49)	
6/17				0.2(0.11)			66.5(0.99)						42.6(0.60)				39.3(1.50)
6/18						23.1(0.86)			47.9(0.75)			37.8(0.77)		65.7(0.90)	24.5(0.75)	28.3(0.69)	
6/19			50.3(1.27)		42.7(1.22)			31.8(0.69)		32.7(1.07)	5.1(0.30)		52.0(0.70)		34.3(0.83)		57.0(1.62)
6/20		27.5(0.76)		9.5(0.88)					58.3(0.82)			53.2(0.86)		69.5(0.80)		42.1(0.76)	
6/21							83.4(1.02)								41.6(0.83)	56.4(0.87)	65.7(1.54)
6/22	66.6(1.42)		56.8(1.13)			40.9(1.00)		56.7(0.90)			18.2(0.61)	68.1(0.86)					
6/23					69.1(1.47)												
6/24				37.0(1.00)			90.0(1.02)		66.3(0.85)	39.3(0.97)							
6/25						54.4(1.06)											
6/26			72.0(1.23)		77.2(1.32)			70.3(0.94)		50.2(1.07)	40.7(0.88)						
6/27				48.5(1.54)			104.3(1.02)										
6/28		62.3(0.95)				66.7(1.08)			70.6(0.83)								
6/29	79.0(1.23)		83.1(1.22)		81.0(1.18)			77.9(0.90)									
6/30											75.3(1.29)						
7/1				55.3(1.30)						55.8(0.99)							
7/2						70.8(1.01)											
7/3			85.0(1.18)		89.3(1.14)			79.5(0.86)		57.5(0.94)	84.4(1.15)						
7/4				65.3(1.32)													
7/5		67.1(0.79)															
7/6	84.4(1.07)																
7/7																	
7/8				67.6(1.19)													

1/ Cumulative catch in thousands of fish by period for the King salmon season (June & early July).

2/ Boat hours computed by multiplying the number of hours in the period by number of boats making at least one delivery during the period; however for the years 1961-1966 the number of boats in the period was obtained by using the greatest number of boats making at least one delivery during any day of the period.

Appendix Table 7. King salmon catches by statistical areas, subdistrict 334-10 of the Yukon district 1965-1977 1/

Statistical Area	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
334-11 (Black River)	2,266	2,495	2,110	4,047	1,405	4,992	3,038	2,730	7,193	2,973	7,109	7,569	10,714
12 (South Mouth)	18,140	20,038	25,811	27,859	21,894	23,367	25,105	11,638	28,166	28,372	13,746	25,925	15,289
13 (Sunshine Bay)	8,137	5,460	6,203	7,997	9,635	5,258	7,135	3,435	4,302	6,863	8,167	6,574	7,623
14 (Kwiguk)	6,836	4,143	7,730	3,202	5,594	5,351	10,342	9,073	3,468	3,964	259	782	825
15 (Middle Mouth)	23,729	10,858	27,202	6,700	12,875	6,079	16,853	18,375	756	12,801	1,406	4,521	15,181
16 (North Mouth)	4,458	3,009	4,729	919	3,833	849	3,924	5,276	40	1,930	506	1,348	1,544
17 (Head of Passes	16,114	12,898	18,583	17,378	9,930	4,890	12,037	13,059	6,683	6,674	6,760	5,086	6,736
18 (Fish Village)	9,588	11,882	11,967	11,363	5,422	6,716	5,963	4,473	2,182	5,880	3,597	4,587	7,833
334-10 Total	89,268	70,783	104,335	79,465	70,588	57,502	84,397	68,059	52,790	69,457	41,550	56,392	65,745

1/ Catch data only for king salmon season (June and early July).

Appendix Table 8. Comparative commercial summer chum salmon catch data, subdistricts 334-10 and 334-20, Yukon district, 1967-1977.

	Subdistrict 334-10					Subdistrict 334-20				
Year	Duration	Days Fished	Boat Hours	Catch	(catch/boat hour)	Duration	Days Fished	Boat Hours	Catch	(catch/boat hour)
1967	6/8-6/27	11.0	77,208	9,494	(0.12)	-	-	-	-	-
1968	6/6-7/3	14.0	91,380	12,995	(0.13)	6/13-7/2	10.5	27,600	1,407	(0.05)
1969	6/2-6/28	12.5	84,864	8,840	(0.10)	6/15-7/1	8.0	16,620	5,024	(0.30)
1970	6/11-7/3	10.5	58,056	87,169	(1.50)	6/14-7/3	9.0	15,756	17,536	(1.11)
1971	6/14-7/3	10.5	73,032	36,077	(0.49)	6/20-7/5	8.5	17,832	6,112	(0.34)
1972	6/8-7/1	12.5	79,236	69,658	(0.88)	6/15-7/1	8.5	19,296	9,040	(0.47)
1973[1/]	6/7-7/11	14.5	100,284	191,840	(1.91)	6/10-7/14	14.5	36,000	56,481	(1.57)
1974	6/3-7/13	16.5	114,624	461,025	(4.02)	6/5-7/16	15.5	35,316	72,281	(2.05)
1975	6/9-7/16	15.0	86,304	394,447	(4.72)	6/22-7/18	10.5	21,024	99,944	(4.75)
1976	6/14-7/14	12.0	90,658	272,493	(3.00)	6/20-7/16	11.0	32,624	99,407	(3.05)
1977	6/13-7/12	12.0	63,036	232,427	(3.69)	6/19-7/15	10.0	27,048	102,759	(3.80)

1/ 6 inch maximum mesh size regulation during late June-early July became effective in 1973.

Appendix Table 9. Comparative commercial coho and chum salmon catch data for the fall season, subdistrict 334-10 Yukon district, 1961-1977.

Year	Duration	Days 1/ fished	Boat hours	Commercial catch (catch/boat hour) Coho	Chum
1961	8/1-8/31	16	14,772	2,855 (0.2)	42,461 (2.9)
1962	8/1-9/3	21	46,950	22,926 (0.5)	53,116 (1.1)
1963	8/9-9/6	18	2,100	5,572 (2.7)	no purchases
1964	8/3-8/27	17	8,346	2,446 (0.3)	8,347 (1.0)
1965	8/2-8/4	2/	2/	350 (2/)	22,936 (2/)
1966	7/25-9/10	28	41,994	19,254 (0.5)	69,836 (1.7)
1967	7/24-8/27	21	19,272	9,925 (0.5)	36,451 (1.9)
1968	7/22-8/28	22	47,232	13,153 (0.3)	49,857 (1.1)
1969	7/11-8/23	25	47,352	14,041 (0.3)	148,017 (3.1)
	7/21-8/23 3/	20	39,408	14,041 (0.4)	128,866 (3.3)
1970	7/14-8/26	25	68,712	12,245 (0.2)	232,969 (3.4)
	7/20-8/26 3/	22	56,160	12,245 (0.2)	200,306 (3.6)
1971	7/12-9/4	32	108,336	12,165 (0.1)	246,384 (2.3)
	7/22-8/28 3/	22	85,344	11,582 (0.1)	178,744 (2.1)
1972	7/11-9/2	32	106,974	21,705 (0.2)	181,287 (1.7)
	7/20-8/26 3/	22	81,726	19,655 (0.2)	134,752 (1.6)
1973	7/12-9/1	30	140,304	34,860 (0.2)	212,235 (1.5)
	7/19-8/25 3/	22	107,136	34,860 (0.3)	173,783 (1.6)
1974	7/11-8/14	15	62,136	13,761 (0.2)	234,503 (3.8)
	7/18-8/14 3/	12	41,868	13,758 (0.2)	137,235 (3.3)
1975	7/14-8/16	15	68,940	2,242 (0.03)	212,795 (3.1)
	7/21-8/16 3/	12	52,128	2,240 (0.04)	158,183 (3.0)
1976	7/12-8/13	16	77,706	4,084 (0.05)	140,943 (1.8)
	7/19-8/13 3/	11	55,026	4,084 (0.07)	91,091 (1.7)
1977	7/11-8/23	13.5	65,520	30,588 (0.5)	168,319 (2.6)
	7/18-8/23	11	50,568	30,588 (0.6)	129,486 (2.6)

1/ One "day" is equivalent to 24 hours during open fishing period.
2/ Information not available.
3/ More comparable to duration of fishing for past seasons.

Appendix Table 10. Comparative fall chum salmon commercial catch data by date, fall season, subdistrict 334-10, Yukon district, 1969-1977.

Date	Cumulative catch 1/ (Cumulative catch/boat hour) 1969	1970	1971	1972	1973	1974	1975	1976	1977
7/18		16.1(1.86)			16.4(1.26)				
7/19	3.8(1.10)			18.6(1.91)					21.4(3.72)
7/20						12.1(1.57)			
7/21			8.2(1.05)		53.6(2.03)			6.9(0.73)	
7/22		29.6(1.67)		45.8(2.23)					23.4(2.54)
7/23	29.7(3.75)						12.9(1.51)		
7/24			31.9(1.71)			24.7(1.76)		9.7(0.60)	
7/25		30.4(1.54)			67.4(1.91)				
7/26	44.5(3.48)			54.8(1.88)			37.0(2.33)		33.1(2.38)
7/27						59.0(2.81)			
7/28			37.6(1.38)		112.8(2.28)			16.7(0.69)	
7/29		81.6(2.95)		63.7(1.72)					40.8(2.16)
7/30	57.0(3.24)						55.9(2.54)		
7/31			53.5(1.48)			86.9(3.16)		79.5(2.24)	
8/1		126.8(3.57)			122.9(2.01)				
8/2	71.8(3.20)			70.5(1.62)			86.9(2.80)		41.7(1.91)
8/3						91.8(2.86)			
8/4			89.6(1.94)		127.9(1.84)			87.3(1.98)	
8/5		159.4(3.67)		73.6(1.46)					44.9(1.76)
8/6	94.2(3.45)						112.4(2.87)		
8/7			104.3(1.89)			93.0(2.73)		87.7(1.85)	
8/8		188.4(3.67)			133.9(1.72)				
8/9	108.6(3.39)			108.6(1.85)			134.2(2.90)		94.9(3.06)
8/10						94.7(2.57)			
8/11			110.2(1.74)		164.6(1.84)			88.4(1.69)	
8/12		189.9(3.47)		123.5(1.86)					96.4(2.76)
8/13	112.5(3.21)						134.6(2.78)	91.0(1.65)	
8/14			148.3(2.07)			137.4(3.31)			
8/15		192.2(3.35)			170.7(1.77)				
8/16	120.7(3.18)			125.1(1.65)			158.2(3.04)		113.0(2.79)
8/17									
8/18			153.2(1.95)		177.5(1.70)				
8/19		209.1(3.45)		146.3(1.77)					120.0(2.65)
8/20	130.4(3.18)								
8/21			177.4(2.10)						
8/22		214.5(3.39)			185.3(1.64)				
8/23	132.6(3.09)			150.5(1.79)					125.8(2.55)
8/24									
8/25			185.5(2.05)		187.5(1.57)				
8/26		216.4(3.34)		153.3(1.76)					
8/27									
8/28			187.0(2.01)						
8/29					189.3(1.54)				
8/30				154.6(1.60)					
8/31									

1/ Cumulative catch in thousands of fish by period beginning July 18. Fall chum salmon run usually well underway in the lower Yukon River at this date.

Appendix Table 11. Commercial salmon pack by species and type of processing, Yukon district, 1960-1977.[1/]

Year	Cases (48#)			Fresh-Frozen (round wt. in lbs).			Cured King Salmon		Cured Chum Salmon		Salmon
	King	Coho	Chum	King	Coho	Chum	Tierces	1/2 Tierce	Tierces	1/2 Tierce	Roe (lbs.)
1960	13,000			[2/]	[2/]	[2/]	250	180			
1961	19,474			[2/]	[2/]	[2/]	504	146			
1962	15,959	512	1,760	[2/]	[2/]	[2/]	464	280			
1963	16,400	1,190		[2/]	[2/]	[2/]	[2/]	[2/]			
1964	12,041			[2/]	17,000	66,770	537	499			
1965	18,149			275,000	2,500	160,500	670	67			
1966	14,026	836	2,812	414,000	61,355	301,240	398	60			
1967	21,503		126	475,900	66,400	366,496	627	96			1,755
1968	19,499		816	561,690	93,154	454,409	351	170			21,000
1969	9,560	1,104	4,499	423,597	26,973[3/]	829,586[3/]	647	95	15		29,000
1970	6,431	1,002	6,413	716,600	12,900	1,725,000	447	191	51		26,300
1971	6,500	502	3,213	1,058,034	45,836	1,432,455	659	229	139		55,177
1972	7,418	1,005	6,249	1,002,395	83,960	1,495,922	497	147			85,278
1973	5,227	1,008	9,902	1,339,317	181,928	2,929,532	61	133		72	137,594
1974	6,660	603	21,074	1,062,666	58,816	3,879,300	381	56	57		208,842
1975	5,297	40	14,226	781,902	13,299	4,751,941	80	53	45	119	201,404
1976	3,921	80	11,375	1,398,779	29,778	4,256,679	93	92	72	10	226,893
1977	4,642	415	9,428	1,513,484	270,241	4,877,918	180	237	26	-	210,568

Appendix Table 12. Dollar value estimates of Yukon district commercial fishery, 1960-1977[1/]

Year	Gross value of catch to fishermen	Wages earned[2/]	Total income to district	Wholesale value of pack[3/]	Tax revenues to state
1960	$	$	$	$	$
1961	437,000			1,292,300	37,500
1962	361,900			1,275,250	50,400
1963	412,300			1,550,400	42,000
1964	354,400			1,203,800	35,000
1965	542,300			1,412,700	42,000
1966	454,500			1,308,100	37,000
1967	606,400	250,000	856,400	1,864,800	41,700
1968	535,000	264,000	799,000	1,655,200	47,000
1969	519,200	234,000	753,000	1,976,200	40,000
1970	623,100	185,800	808,900	2,113,100	45,000
1971	783,000	357,700	1,140,700	2,106,600	42,000
1972	784,000	445,400	1,229,400	2,405,200	45,300
1973	1,217,000	585,800	1,802,900	4,453,900	62,800
1974	1,921,000	500,100	2,421,100	6,035,900	84,100
1975	1,793,900	596,600	2,390,500	4,939,700	87,100
1976	2,151,000	687,600	2,838,600	6,815,500	96,900
1977	4,068,700	850,000	4,918,700	10,499,400	151,000

1/ Information not available for 1960 and wages earned during 1961-1966.
2/ Includes wages paid to tender boat operators, processing plant employees in district.
3/ Based on type of processing when fish were shipped out of the district.

Appendix Table 13. Estimated mean prices paid to fishermen, Yukon district, 1961-1977 1/ (prices per fish)

Year	King	Coho	Chum	Other
1961	$3.50	$	$	$
1962	3.50			
1963	3.50			
1964	3.75	.50	.25	
1965	4.50		.35	
1966	4.50	.50	.35	
1967	4.50	.50	.35	
1968	4.64	.50	.50	
1969	4.60	.55	.50	
1970	5.00	.84	.61	
1971	5.34	.82	.64	
1972	5.90	.92	.75	
1973	7.45	1.27	1.18	
1974	9.00	1.75	1.40	
1975	9.24	1.50	1.36	
1976	11.28	1.63	1.50	
1977	20.00	3.76	2.67	

1/ Information not available for some species.

Appendix Table 14. Mean weights and numbers of salmon per case, Yukon district, 1962-1977. 1/

	Mean round weight in pounds 2/			Mean no. of fish/case 3/		
Year	King	Coho	Chum	King	Coho	Chum
1962				3.2	13.3	10.5
1963						
1964	22.6		8.0	3.4		
1965	23.0		6.6	3.3		
1966	23.0		6.9	3.5		
1967	24.0	7.3	7.0	3.2		
1968	26.5		8.3	3.3		11.0
1969	23.9	6.7	6.5	3.4	10.0	12.0
1970	22.3	7.1	6.7	3.7	10.6	11.7
1971	22.6	6.9	6.4	3.3	10.3	12.4
1972	24.6	7.1	6.8	3.2	10.1	11.8
1973	24.5	7.1	7.4	3.1	10.5	10.8
1974	23.4	7.1	6.7	3.4	10.5	11.7
1975	22.0	7.2	6.8	3.8	10.4	11.6
1976	21.7	6.8	6.8			
1977	23.3	7.7	7.2			

1/ Information is not available for some species.
2/ Based on age-length-weight samples or fish ticket entries.
3/ Standard 48 lb. case.

APPENDIX TABLE 15.

SUBSISTENCE SALMON ROE SALES INFORMATION, YUKON DISTRICT, 1974-1977.

Pounds of Raw Product

1974

Sub district	King	Chum	Total	Number of Fishermen	Value of Sales	Ave.value/ Fishermen	Number of Processors	First Wholesale Values 1/
1	0	0	0	0	0	$ 0		$ 0
2	0	239	239	10	179	18		358
3	0	4,103	4,103	25	3,077	123		6,154
4	51	27,636	27,687	91	20,041	220		40,082
5	1,701	14,613	16,314	69	12,236	177		24,472
6	700	33,940	34,640	42	25,980	619		51,960
TOTALS	2,452	80,531	82,983	237	61,513	260	11	123,026

1975

1	0	0	0	0	0	$ 0		$ 0
2	61	786	847	26	974	37		1,948
3	551	4,738	5,289	18	6,082	338		12,164
4	45	32,748	32,793	108	37,712	349		75,424
5	1,300	14,787	16,087	75	18,500	247		37,000
6	510	18,367	18,877	36	21,709	603		42,158
TOTALS	2,467	71,426	73,893	263	84,977	323	14	168,694

1976

1	0	0	0	0	0	$ 0		$ 0
2	209	612	821	20	1,026	51		2,052
3	2,044	1,218	3,262	30	5,260	175		10,520
4	494	38,532	39,026	126	48,783	387		97,566
5	1,377	11,303	12,680	83	15,850	191		31,700
6	1,706	16,992	18,698	72	28,511	395		57,022
TOTALS	5,830	68,657	74,487	331	99,430	300	14	198,860

1977

1	0	81	81	3	243	$ 81		$ 486
2	791	2,455	3,246	108	10,219	95		20,438
3	6,352	2,049	8,401	83	31,304	377		62,608
4	2,872	29,640	32,512	222	81,280	366		162,560
5	2,582	10,497	13,079	126	32,698	259		65,396
6	2,810	18,708	21,518	90	53,795	598		107,590
TOTALS	15,407	63,430	78,838	632	209,539	332	14	419,078

1/ Based on 2 x value received by fishermen.

Appendix Table 16. Yukon River comparative subsistence catch and effort data, 1961-1977 (numbers per fishing family are in parenthesis).

Year	Total Catch		Equivalent Catch 1/		Mean Equivalent Catch per Family 1/	
	King Salmon	Other Salmon 2/	King Salmon	Other Salmon 2/	King Salmon	Other Salmon 2/
1961	23,719	407,814	23,719	405,632	38	650
1962	19,910	358,441	13,010	329,144	23	583
1963	32,656	421,625	26,141	372,578	44	624
1964	22,817	485,630	19,480	460,712	32	765
1965	19,723	458,379	16,950	436,306	31	806
1966	14,017	214,236	11,507	204,913	23	415
1967	19,661	288,595	16,306	256,926	35	545
1968 3/	14,832	189,607	11,883	170,522	25	358
1969	14,946	213,725	13,916	195,476	30	426
1970	15,926	223,237	13,474	199,163	34	498
1971	28,044	229,914	24,807	219,564	46	407
1972	21,868	151,008	19,370	142,669	43	315
1973	26,433	221,620	23,781	213,806	42	376
1974	23,343	330,223	19,348	311,538	36	584
1975	15,645	311,979	12,619	293,256	20	475
1976	19,329	262,624	16,524	255,079	23	395
1977	20,388	267,127	16,092	250,791	25	386

Year	Fishing Families surveyed 1/	People in fishing families 1/	Snowmachines 1/	Sled dogs 1/	Gear operated 1/ Gill nets	Fishwheels
1961	624	3,626 (5.8)		4,806 (7.7)	577	169
1962	564	3,279 (5.8)		3,848 (6.8)	613	138
1963	597	3,460 (6.9)		4,155 (7.0)	716	156
1964	602	3,524 (6.0)		4,003 (6.6)	840	155
1965	541	3,453 (7.3)		3,974 (7.3)	647	127
1966	494	3,144 (6.4)		3,112 (6.3)	578	116
1967	471	2,756 (5.9)	192 (0.4)	2,752 (5.8)	530	87
1968	476	3,109 (6.5)	262 (0.6)	2,719 (5.7)	565	71
1969	459	2,974 (6.5)	349 (0.8)	2,442 (5.3)	594	63
1970	400	2,679 (6.7)	346 (0.9)	2,214 (5.5)	647	55
1971	540	3,510 (6.5)	521 (0.9)	2,449 (4.5)	867	63
1972	453	2,854 (6.3)	470 (1.0)	1,731 (3.8)	790	63
1973	569	3,585 (6.3)	627 (1.1)	2,660 (4.7)	996	83
1974	533	3,358 (6.3)	575 (1.1)	2,416 (4.5)	728	94
1975	618	3,893 (6.3)	795 (1.3)	2,833 (4.6)	1,167	126
1976	730	4,599 (6.3)	909 (1.3)	4,027 (5.5)	1,150	155
1977	651	4,792 (7.3)	832 (1.3)	3,919 (6.0)	819	164

1/ Data from villages surveyed each year since 1961: Mouth to Fort Yukon and Tanana River (does not include Fairbanks area).
2/ Mostly chum salmon, some pinks and cohos.
3/ Total king and other salmon catches have been corrected.

Appendix Table 17. Comparative Yukon River king salmon subsistence catches by village, 1961-1977.

Village	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
Mouth to Anvik River																	
Shaktoolik	180	116 1/	921 1/	52	49	127	755	30	720	1,093	882	462	165	283	108	122	302
Unalakleet	165	53	81	87	177	263	287	205	852	589	1,116	647	461	569	130	363	213
Aiatamuk	137	21	120	63	145	160	541	42	810	151	627	300	1,011	208	55	398	62
Eunonak-Kwiguk	179	181	293	73	281	645	959	147	238	23	42	37	106	5	0	-	-
Aprohe Pass & vicinity	111	36	195	53	131	67	162	53	551	394	328	342	1,008	394	704	472	171
Kotlik-Hamilton																	
Subtotal	772	406	1,610	328	783	1,242	2,704	477	3,179	2,250	2,995	1,788	2,811	1,459	497	1,355	750
Anvik River to Owl Slough																	
Mountain Village	1,110	619	2,427	985	570	217	1,345	238	557	348	2,036	932	912	460	394	397	172
Pitkas Point - St. Marys	1,810	391	1,250	521	826	499	993	168	737	575	1,915	1,517	1,270	878	438	1,233	576
Pilot Station	753	279	804	237	502	440	1,934	784	367	647	1,400	1,958	1,508	517	107	502	956
Marshall	1,265	503	2,012	290	942	350	306	365	564	598	785	717	1,183	1,068	436	694	364
Subtotal	4,938	1,732	6,494	2,093	2,780	1,506	4,178	1,555	2,225	2,168	6,136	4,720	4,853	2,923	1,375	2,886	1,668
Owl Slough to Bonasila R.																	
Russian Mission	1,563	641	1,392	1,185	1,393	800	2,019	2,170	707	993	839	975	1,387	1,243	2,098	1,328	639
Holy Cross	2,648	1,111	3,123	2,243	2,351	2,645	2,876	1,418	1,877	1,678	1,032	2,159	3,708	2,243	2,792	1,492	1,920
Subtotal	4,211	1,752	4,515	3,428	3,744	3,445	4,895	3,588	2,584	2,671	1,871	3,134	5,095	3,486	4,890	2,820	2,559
Bonasila R. to Illinois Cr.																	
Anvik	22	51	163	193	118	144	54	114	71	67	152	72	67	111	83	84	67
Grayling	25 2/	37 2/	197 2/	124	248	85	199	208	187	195	416	185	518	547	100	117 3/	148
Kaltag	33	224	102	330	57	47	199	60	232	124	154	83	148	818	192	57	216
Nulato	513	171	835	355	305	218	578	209	771	734	470	364	307	1,161	1,119	968	1,531
Koyukuk	483	423	629	209	228	93	262	398	357	30	410	417	984	604	50	437	752
Galena	626	123	282	158	260	407	210	456	263	373	574	608	510	706	1,294	435	1,155
Ruby-Kokrines	1,060	226	1,914	2,555	1,843	887	820	981	1,619	1,313	2,465	3,075	2,418	2,899	912	1,956	735
Subtotal	2,762	1,255	3,722	3,884	3,057	1,881	2,322	2,326	3,500	2,736	4,641	3,805	4,330	6,844	3,750	4,057	4,605
Illinois Cr. to U.S. Can. Border																	
Tanana	2,379	332	1,414	329	524	421	151	627	683	361	428	1,461	965	789	80	1,338	858
Rampart	605	1,438	1,231	990	1,041	869	368	922	321	150	1,190	1,457	2,614	452	517	581	1,194
Stevens Village	650	831	1,073	323	910	620	534	787	350	851	750	1,002 3/	1,027 3/	590 3/	362	643 3/	1,252 3/
Beaver	185	442	691	710	490	31	210	498	458	773	777	241	358	34	188	198	299
Fort Yukon	2,958	1,822	2,831	2,098	2,747	1,074	692	632	75	1,019	706	520	536	1,030	215	1,158	1,061
Circle	498	393	250	1,200	-	-	-	-	-	-	666	345	229	408	15	525	304
Eagle	875	400	500	17	100	-	-	-	-	-	111	353	421	56	20	633	1,171
Subtotal	8,148	5,658	7,790	5,669	5,802	3,015	1,955	3,463	1,887	3,154	4,628	5,379	6,146	3,367	1,377	5,069	6,129
Innoko River																	
Shageluk																11	
Holikachuk																	
Subtotal																11	
Koyukuk River																	
Nulato	-	100	32	112	9	-	7	35	16	12	5	1	35	69	23	21	
Hughes	-	-	47	18	-	-	65	82	10	116	378	27	32	10	25	155	
Alatna	-	-	-	-	-	-	-	1	8	2	0	3	1	17	0	0	
Allakaket	-	-	85	-	-	-	70	3	15	128	266	25	73	138	151	231	172
Subtotal	-	100	164	130	9	-	142	121	49	258	651	56	141	234	199	407	295
Tanana River																	
Minto-Manley Hot Springs	347	92	325	468	276	146	-	12	76	138	7	99	58	176	213	226	752
Nenana	310	115	213	194	157	272	252	462	465	357	2,357	887	683	1,431	533	864	742
Fairbanks	-	-	-	-	-	-	-	-	-	132	98	190	26	38	32	31	67
Subtotal	657	207	538	662	433	418	252	474	541	627	2,462	1,176	767	1,645	778	1,221	1,561
Chandalar River																	
Venetie	-	-	-	-	-	-	-	-	7	10	-	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-	-	-	7	10	-	-	-	-	-	-	-
Porcupine River																	
Canyon Village	-	-	17	35	-	-	-	-	-	-	-						
Chalkyetsi & Kevinjik R. Fish Camp	-	-	2	2	-	-	-	-	-	-	-						
Old Crow, Y.T.	-	-	44	-	94	65	43	28	27	8	9	-	20	100	100	23	29
Subtotal	-	-	63	37	94	65	43	28	27	8	9	-	20	100	100	23	29
Yukon Territory Villages 5/																	
Dawson	2,231	2,000	1,500	3,470	351	50	50	100	-	40	-	-	-	-	-	500	531
Stewart River	-	-	-	-	-	-	-	100	-	30	-	100	99	-	-	-	-
Mayo-Stewart Crossing	-	300	250	150	400	100	30	-	-	-	250	-	25	233	-	-	61
Fraser Falls	-	-	-	-	-	-	-	-	-	-	-	-	25	-	-	-	-
Burnash-Kluane R.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fort Selkirk	-	-	-	-	100	125	400	200	22	11	-	-	45	-	-	-	-
Pelly	-	2,000 4/	2,000 4/	1,000	300	350	600	600	200	450	450	380	53	433	-	200	265
Faro	-	-	-	-	-	-	-	-	-	-	-	-	75	-	-	-	-
Ross River	-	500	600	-	500	120	150	200	-	120	-	35	75	30	-	-	-
Minto	-	-	-	600	170	350	-	100	-	-	-	15	261	-	-	-	-
Teichun Creek	-	-	-	-	150	-	250	100	100	60	-	-	-	-	-	-	-
Carmacks	-	3,000	2,500	700	600	1,050	1,450	1,200	450	700	1,400	1,080	1,384	2,583	-	800	1,121
Lake Laberge-Whitehorse	-	-	-	-	-	-	-	-	-	20	180	-	-	-	-	-	-
Takhini	-	-	-	-	-	-	40	-	-	-	-	-	-	-	-	-	-
McClintock R.	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-
Carcross	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Teslin-Johnson's Crossing	-	1,000	900	720	450	300	200	200	175	605	80	-	54	20	-	-	800
Subtotal	10,375	10,500	7,750	8,646	3,021	2,635	3,170	2,872	973	2,092	2,791	1,547	2,096	3,279	2,900 6/	1,300	2,778
Total:	31,864	21,610	32,970	22,877	19,723	14,272	19,661	15,006	15,000	15,974	27,953	21,868	26,459	23,137	15,466	19,329	20,380

1/ Includes Black River catches. 2/ Includes Shageluk-Holitachuk fish camp catches. 3/ Includes New Minto fish camp catches.
4/ Includes Minto catches. 5/ Data by village obtained from annual reports. Subtotals includes revised catch data and summation of village catches may not equal subtotals. 6/ Catch by village not available.
7/ Includes catches made by Fairbanks permit holders who fished in Yukon River near bridge crossing.

Appendix Table 18. Comparative Yukon River chum salmon subsistence catches by village, 1961 - 1977. 1/

Village	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
Mouth to Anuk River																	
Sheldon's Point	12,683	10,899	32,577	8,701	10,884	3,007	2,757	8,693	5,573	4,238	4,355	3,554	2,720	6,247	1,459	2,033	1,327
Alakanuk	8,932	5,747	17,953	11,333	21,473	9,830	9,964	14,184	15,806	10,994	7,895	5,696	6,551	12,743	3,656	10,866	6,591
Emmonak-Kwiguk	15,670	9,074	27,749	16,954	47,386	11,824	15,314	16,569	12,836	7,265	5,087	4,028	10,135	7,388	5,336	8,397	7,501
Aproka Pass & Vicinity	8,409	6,071	8,915	7,712	20,129	10,741	7,910	4,853	4,048	565	559	344	580	1,460	229	231	25
Kotlik-Hamilton	3,931	5,362	9,942	4,076	4,728	3,003	7,251	1,709	6,391	4,878	4,682	3,976	7,639	6,098	6,578	10,289	7,152
Subtotal	49,805	37,153	97,136	48,776	104,600	38,405	43,196	46,008	44,654	27,940	22,578	18,398	27,625	33,936	17,258	31,816	22,596
Anuk River to Owl Slough																	
Mountain Village	7,373	8,331	10,106	13,593	11,475	7,548	8,305	7,312	10,676	4,865	8,214	5,909	7,524	11,661	6,720	8,278	11,368
Pitkas Point - St. Marys	8,771	10,510	7,001	12,508	14,130	8,460	9,790	9,166	11,586	14,604	13,533	11,072	9,201	14,478	8,644	12,060	12,347
Pilot Station	5,605	13,926	5,553	10,776	7,865	5,507	6,520	4,770	7,515	5,082	4,171	7,026	8,474	8,567	7,849	5,498	5,708
Marshall	5,992	6,595	8,023	10,125	6,631	3,640	3,070	3,530	6,606	4,910	6,154	5,174	4,934	6,763	5,710	3,938	2,696
Subtotal	27,741	39,362	30,683	47,002	40,101	25,235	27,685	24,778	36,383	30,261	32,072	29,181	30,133	41,469	28,923	29,774	32,319
Owl Slough to Bonasila R.																	
Russian Mission	4,098	9,994	5,354	10,069	4,888	2,707	4,897	3,836	3,668	3,114	2,378	2,919	2,459	4,740	4,113	2,407	2,262
Holy Cross	21,144	20,424	12,532	31,447	25,709	4,228	22,341	10,309	6,037	4,188	2,387	3,421	3,532	4,611	4,691	1,546	5,404
Subtotal	25,242	30,418	17,886	41,516	30,597	6,935	27,238	14,145	9,705	7,302	4,765	6,340	5,991	9,351	8,804	3,953	7,666
Bonasila R. to Illinois Cr.																	
Anvik	61,406	43,404	28,064	34,341	37,179	14,239	20,793	10,020	8,925	9,924	8,121	3,689	20,850	29,261	30,924	26,660	23,847
Grayling	56,284 2/	32,737 2/	18,358 2/	23,784	36,436	11,437	22,852	8,225	18,037	12,548	6,900	6,428	12,778	27,421	26,476	27,500 2/	17,102
Kaltag	23,395	25,824	23,193	35,961	29,382	21,729	27,028	12,090	9,942	12,465	10,662	4,285	23,135	14,920	11,699	13,106	16,588
Nulato	63,163	27,948	31,742	62,446	43,988	22,017	22,521	13,242	23,853	26,456	18,369	7,648	13,568	37,312	22,552	13,253	12,065
Koyukuk	13,544	6,282	7,966	36,167	11,232	7,443	4,613	3,541	3,359	3,789	3,125	1,772	1,964	14,978	5,667	2,440	3,946
Galena	10,585	1,673	6,731	3,100	2,741	8,296	2,650	1,079	2,422	3,179	2,015	1,353	4,612	8,307	11,580	13,435	5,527
Ruby-Kokrines	15,654	18,243	15,585	30,122	17,603	5,530	10,690	2,382	5,201	8,068	13,356	6,725	12,932	19,235	8,820	10,777	4,349
Subtotal	244,031	156,111	131,639	225,921	178,561	90,691	111,147	50,579	71,739	76,429	62,548	31,900	89,839	151,434	117,638	107,171	83,424
Illinois Cr. to U.S.-Canadian Border																	
Tanana	12,775	7,245	16,646	15,348	14,885	10,421	11,938	13,406	12,455	23,017	25,273	13,108	10,795	12,447	26,342	21,592	19,790
Rampart	11,722	6,962	11,209	14,963	13,462	4,056	15,763	2,636	8,935	5,252	11,435	3,674 3/	8,986 3/	1,527	8,117	14,175	10,056
Stevens Village	3,490	4,355	8,247	6,979	7,346	1,900	3,145	2,022	2,725	8,292	7,957	1,118 3/	6,078 3/	6,728 3/	2,297	1,170 3/	4,926 3/
Beaver	2,975	2,334	12,119	11,359	3,274	4,135	4,292	3,619	1,965	2,378	1,870	3,157	1,372	1,583	1,270	517	716
Fort Yukon	13,252	10,255	31,219	19,407	19,402	3,960	8,983	6,564	3,338	6,354	3,498	1,597	3,074	142	19,458	1,143	13,630
Circle	992	800	100	2,300	-	-	-	-	-	-	2,940	752	592	1,266	1,283	153	203
Eagle	150	100	125	1,582	256	-	-	-	-	-	490	587	2,109	66	1,825	1,141	7,432
Subtotal	45,356	32,051	79,665	71,938	58,625	24,472	44,121	28,247	29,418	45,293	53,463	23,993	33,006	23,759	60,592	39,891	56,753
Innoko River																	
Shageluk		3,500														1,577	
Holikachuk		100															
Subtotal		3,600														1,577	
Koyukuk River																	
Huslia	-	16,000	5,455	13,913	5,101	-	5,489	3,677	2,466	4,018	1,468	534	4,482	6,601	5,026	8,791	3,753
Hughes	-	-	767	559	-	-	5,837	2,237	3,112	6,367	16,902	2,777	2,541	8,786	5,429	4,280	4,856
Alatna	-	-	-	-	-	-	170	99	830	1,226	609	490	27	3,510	950	650	210
Allakaket	-	-	1,972	-	-	-	3,929	1,391	3,254	7,759	8,773	867	2,465	7,034	5,609	4,215	3,686
Subtotal	-	16,000	8,194	14,472	5,101	-	15,425	7,404	9,662	19,370	27,752	4,668	9,515	25,931	17,014	17,936	12,505

Appendix Table 18 . Comparative Yukon River chum salmon subsistence catches by village, 1961 - 1977. 7/
(Continued)

Village	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
Tanana River																	
Minto-Manley Hot Springs	6,486	17,228	15,493	17,628	11,358	7,152	22	740	330	540	8	6	7	20	6,000	9,400	16,192
Nenana	6,426	13,821	13,599	11,129	7,363	12,023	3,517	6,055	3,247	11,398	19,007	20,864	14,154	26,340	26,634	14,345	24,167
Fairbanks	-	-	-	-	-	-	-	-	-	1,072	5,655	8,608	1,657	2,958	1,615	2,826	725
Subtotal	12,912	31,049	29,092	28,757	18,721	19,175	3,539	6,795	3,577	13,010	24,670	29,478	15,818	29,318	34,249	26,571	41,084
Chandalar River																	
Venetie	-	1,000	200	-	9,856	1,098	2,626	551	3,116	2,400	801	50	410	---	2,401	508	1,660
Subtotal	-	1,000	200	-	9,856	1,098	2,626	551	3,116	2,400	801	50	410	---	2,401	508	1,660
Porcupine River																	
Canyon Village	-	210	1,566	2,316	1,531												
Chalkytsik - Kevinjik R. Fish Camp	-	500	64	742	1,438												600
Old Crow, Y.T.	-	2,800	20,000	-	7,535	7,175	11,768	10,000	3,411	620	100	5,000	5,827	7,000	11,600	3,125	5,592
Subtotal		3,510	21,630	3,058	10,504	7,175	11,768	10,000	3,411	620	100	5,000	5,827	7,000	11,600	3,125	6,192
Yukon Territory Villages 5/																	
Dawson	725	3,000	1,500	3,331		50	50	50		60							
Stewart River																	
Mayo-Stewart Crossing																	
Fraser Falls																	
Burwash-Kluane R.							250	200	760		100		199	32			
Fort Selkirk					1,000	450	1,000	500	500	500		2,000					
Pelly		1,500 4/	1,500 4/		100			50	300					14		100	650
Faro																	
Ross River																	
Minto				600	623	450	50	100	100				327				
Tatchun Creek																	
Carmacks		2,000	2,500	250	260	100	500	200	400	50			487	1,590		200	780
Lake Laberge-Whitehorse																	
Takhini																	
McClintock R.																	
Carcross																	
Teslin-Johnson's Crossing										2							
Subtotal	5,800	6,500	5,500	4,181	2,265	1,425	1,832	1,100	2,089	580	13,900	3,000	1,111	1,636	6,500 8/	300	2,929
Total:	412,889 6/	358,441 6/	421,625	485,621	458,931	214,611	288,577	189,607	213,754	223,205	228,849	151,008	219,275	323,834	300,379	262,622	267,127

1/ Includes Black River catches.

2/ Includes Shageluk-Holkachuk fish camp catches.

3 Includes New Minto fish camp catches.

4/ Includes Minto catches.

5/ Data by village obtained from annual reports. Subtotals include revised catch data and summation of village catches may not equal subtotal.

6/ Includes pinks and cohos not provided in breakdown of catch by village data.

7/ Includes small numbers of pink and coho salmon.

8/ Catch by village not available.

9/ Includes catches made by Fairbanks permit holders who fished in Yukon River near bridge crossings.

Appendix Table 19. Comparative Yukon River drainage king salmon escapement estimates, 1959-1977 1/

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
Andreafsky River																			
East Fork		1,020	1,003	675 2/		867		368		380	231 2/	665	1,904	798	825		993	818	2,000
West Fork		1,220		762 2/		705	355 2/	303	276 2/	383	274 2/	574 2/	1,204	602 2/	708	285	421	643	1,499
Total		2,240		1,437		1,572		664		763	505	1,239	3,108	1,388	1,533		1,414	1,461	3,507
Anvik River Drainage																			
Tower Count														1,104	517	471	640	958	1,261
Below Tower Site (Includes tributaries)														68	96 2/		172 3/	198 3/4/	93
Above Tower Site (Includes tributaries)														346	126 2/		190	98	-
Subtotal		1,950	1,226				650 2/	638	336 2/	297 2/	296 2/	368		414	222 2/		362	296	93
Total (Best estimate of escapements, combined tower, aerial and boat surveys).		1,950	1,226				650 2/	638	336 2/	297 2/	296 2/	368		1,482	613	471	720	1,155	1,354
Nulato River																			
North Fork (Including main river)		483	376													55	123	471	206
South Fork		273	167													23	81	177	201
Total		756	543													78	204	648	407
Gisasa River		300	266 2/													161	305	332	255
Tozitna River		106 2/															202	42 2/	123
Chena River		132			137								193 2/3/	138 2/3/	21	1,035 3/	316 3/	531	563
Salcha River		1,660	2,870	937		450	400	800		735	461 2/	1,802	152 2/	1,193	249	1,057	1,055	1,691	1,202
Tatchun Creek												100 2/	100	97		192	175	52	150
Nisutlin River (Sidney Creek-100 Mile Cr.)										407	105	615	640	317	36 2/	40 2/	249	102	77
												625	856	392	228	273	313	121	277
Whitehorse Dam (Fishway Counts)	1,054	660	1,060	1,500	484	587	903	563	533	407	334								

1/ Data obtained from aerial surveys unless otherwise indicated. Peak estimates listed only.
2/ Incomplete or poor survey conditions resulting in a very minimal count.
3/ Boat survey.
4/ Also includes 94 kings observed in Yellow River.
5/ Foot survey.

Appendix Table 19. Comparative Yukon River drainage king salmon escapement estimates, 1959-1977 1/

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
Andreafsky River																			
East Fork		1,020	1,003	475 2/		867		361		380	231 2/	665	1,904	799	826		393	818	2,000
West Fork		1,220		162 2/		705	355 2/	303	276 2/	383	274 2/	574 2/	1,284	602 2/	709	288	421	643	1,899
Total		2,240		1,437		1,572		664		763	505	1,239 2/	3,188	1,380	1,615		1,114	1,461	3,507
Anvik River Drainage																			
Tower Count														1,104	517	471	549	958	1,261
Below Tower Site (Includes tributaries)														68	98 2/		172 3/	198 3/4/	93
Above Tower Site (Includes tributaries)														346	126 2/		190	98	-
Subtotal		1,950	1,226				650 2/	638	336 2/	297 2/	296 2/	368		414	222 2/		362	296	93
Total (Best estimate of escapements, combined tower, aerial and boat surveys).		1,950	1,226				650 2/	638	336 2/	297 2/	296 2/	368		1,172	843	471	720	1,185	1,354
Kuskokwim River																			
North Fork (including main river)		481	376													55	123	471	206
South Fork		273	167													23	81	177	201
Total		756	543													78	204	648	407
Gisasa River		300	266 2/													161	385	332	255
Tozitna River		106 2/															202	42 2/	123
Chena River		132			137								193 2/3/	130 2/3/	21	1,035 3/	386 3/	531	563
Salcha River		1,660	2,878	937		450	408	800		735	461 2/	1,882	182 2/	1,193	249	1,857	1,056	1,691	1,202
Fishcamp Creek												100 2/	100	97		192	175	62	150
Nigutlin River (Sidney Creek-100 Mile Cr.)										407	105	615	640	317	36 2/	48 2/	249	102	77
Whitehorse Dam (Fishway Counts)	1,054	660	1,068	1,500	484	587	903	563	533	407	334	625	858	392	228	273	313	121	277

1/ Data obtained from aerial surveys unless otherwise indicated. Peak estimates listed only.
2/ Incomplete or poor survey conditions resulting in a very minimal count.
3/ Boat survey.
4/ Also includes 94 kings observed in Yellow River.
5/ Foot survey.

Appendix Table 20. Comparative Yukon River drainage summer chum salmon escapement estimates, 1950-1977 1/

	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
Andreafsky River																				
East fork			3,830	8,118	18,040		12,880	44,670 2/	25,649	14,495 3/	13,600 4/	119,000	84,090	98,096	48,850	10,849 2/	3,215 2/	223,405	105,347	112,722
West fork					19,530				18,115		34,600 4/	159,500	91,710 2/	71,745	26,573	61,835	33,258	235,954	118,420	63,120
Total					37,570				43,764		92,700	278,500	175,800 2/	169,840	69,033			459,439	223,767	175,842
Anvik River Drainage																				
Tower Count															106,342	71,475	201,277	606,800	237,851	162,564
Below Tower Site (indicates tributaries)															137,515	15,190		211,330	168,345	100,240
Above Tower Site (includes tributaries)															74,118	10,966		634,355	243,695	-
Subtotal	100-200,000	200,000	11,100		20,600		12-14,000 2/	100,000	37,500	116,000	51,500 2/		232,700		200,763	26,156		845,405	412,040	100,240
Total (best estimate of escapement combined tower, aerial & boat surveys)	100-200,000	200,000	11,100		20,600		12-14,000 2/	100,000	37,500	116,000	51,500 2/		232,700		245,857	86,665	201,277	845,405	406,166	262,754
Bodo River			3,000	3,403													16,137	25,335	38,250	16,110
Nulato River																				
North Fork (including main river)	50,000																22,144	87,280	39,690	50,225
South Fork	2,500				1,1560												29,016	51,295	9,230	11,305
Total	52,500																51,160	138,495	48,920	69,660
Gisasa River				400													22,022	66,904	23,342	2,204
Jordan River																	1,023	3,502	325 2/	761
Clone River						469 3/	898								670	78	4,350 3/	2,702 3/	605	610
Salcha River				670	1,052	1,161		250 2/	2,375	2,200	3,790	426 2/	7,879	306 2/	907 2/	290	8,040 5/	7,573	6,474	617

1/ Data obtained from aerial surveys unless otherwise indicated. Peak estimates listed only.
2/ Incomplete or poor survey conditions resulting in a very minimal count.
3/ Boat survey.
4/ Includes pink salmon.
5/ Combined aerial and boat surveys.

Appendix Table 21. Comparative Yukon River drainage fall chum salmon aerial survey escapement estimates, 1971-1977 1/

	1971	1972	1973	1974	1975	1976	1977
TANANA RIVER DRAINAGE							
Bear Paw River	-	-	1,530	2,996	1,657	-	-
Toklat River drainage							
Upper Toklat River 3/	-	1,000 2/	6,957	34,310	42,418	35,224	25,000
Lower Toklat River	-	-	-	-	35,867	2,000 2/	-
Subtotal Toklat R. drainage			6,957	34,310	78,285	37,224	25,000
UPPER TANANA RIVER DRAINAGE							
Benchmark #735 Slough	-	5,255	127 2/	1,450	-	336	1,270
Delta River	-	3,650	7,971	4,010	3,946 7/	5,526	17,925
Upper Tanana River 4/	-	8,350	5,635	4,567	-	4,979	3,725
Bluff Cabin Slough	-	6,040	3,450	4,840	5,000 2/	3,197	6,491
Delta Clearwater Slough (1 Mile Slough)	-	-	1,720	1,235	745 2/	1,552	1,900
Subtotal Upper Tanana R. drainage		23,295	18,903	16,102	9,691	15,590	31,311
CHANDALAR RIVER	-	-	-	17,455	6,345 2/	58 2/	4,183
PORCUPINE RIVER DRAINAGE							
Sheenjek River	-	-	1,175	40,507	78,060	12,023	20,506
Fishing Branch River (Yukon Terr.)	250,300,000	35,125 5/	15,987 6/	32,525 6/	353,282 6/	13,450	32,500
Subtotal Porcupine R. drainage	250-300,000	35,125	17,162	73,032	431,342	25,473	53,006
TOTAL	250-300,000	59,420	44,552	143,895	527,320	78,345	113,500

1/ All surveys rated fair-good unless rated otherwise. Only peak estimates listed.
2/ Poor or incomplete survey; very minimal and/or rough estimate.
3/ Includes following areas: Toklat River in vicinity of roadhouse, Shushana River and Geiger Creek.
4/ Richardson Highway Bridge to Blue Creek.
5/ Combined tagging population estimate and weir count.
6/ Weir count.
7/ Foot survey.

Appendix Table 22. Comparative Yukon River drainage coho salmon aerial survey escapement estimates, 1971-1977 1/

	1971	1972	1973	1974	1975	1976	1977
Nenana River drainage							
Lost Slough							
East Bank 1 mile below Anderson	-	-	-	900	116	118	524
East Bank 3 miles below Anderson	-	-	-	488	827	-	-
Wood Creek	-	-	-	-	-	-	310
Clear Creek	-	-	-	-	-	13	-
Seventeen Mile Slough	-	-	-	27	956	229	1,167
Subtotal Nenana R. drainage	-	-	-	1,415	1,899	360	2,001
Delta Clearwater River	3,000	632 3/	1,982	3,950	5,100 3/	1,920	4,793 3/
Clearwater Lake and Outlet	-	417	249 2/	560	1,530	460 3/	730 3/
Richardson Clearwater R.	-	527 2/	175	235	4 2/	80 2/	327

1/ Peak estimates presented only
2/ Poor or incomplete survey.
3/ Boat survey by Sport Fish Division.

APPENDIX TABLE 23 . Western Alaska king salmon catch compared to Japanese mothership catch in the Bering Sea, 1960-1976. 1/

	Yukon Area 2/	A-Y-K Region 3/	Total Western Alaska 4/	Japanese Mothership Bering Sea
1960	78,647	93,017	220,031	142,000
1961	155,570	201,358	295,514	10,000
1962	120,381	156,413	245,960	-
1963	152,247	209,456	279,426	42,000
1964	119,672	171,070	317,598	204,000
1965	140,086	189,888	314,086	116,000
1966	109,643	184,268	275,382	122,000
1967	151,554	243,328	370,244	70,000
1968	123,846	201,319	316,625	293,000
1969	106,891	214,606	351,860	450,000
1970	99,290	235,510	387,125	404,000
1971	138,936	229,379	359,223	157,000
1972	114,224	216,428	291,798	220,000
1973	99,537	193,069	248,872	32,000
1974	120,868	177,988	238,789	234,000
1975	84,703	161,909	196,709	200,000 5/
1976 5/	107,636	221,680	331,081	126,000

1/ Catch data presented in numbers of fish.

2/ Commercial and subsistence catch data combined (includes Canadian catches).

3/ Commercial and subsistance catch data combined.

4/ Combined commercial and subsistence catches of AYK region and Bristol Bay area plus North Alaska Peninsula commercial catches.

5/ Preliminary data.

Attachment 1. List of Yukon area emergency orders and regulations issued, 1977.

Number	Effective Date	Action Taken	Comments
E.R. #1	June 1	Extend licensing and registration deadline for salmon gill nets and vessels & fishwheel vessels to June 8 in Yukon and Kuskokwim districts.	Action taken in response to public request.
3-Y-01-77	June 30	Reduce weekly fishing period in subdistrict 1 from 36 to 24 hours.	Action taken to provide for upriver escapement and fishery requirements.
3-Y-02-77	June 30	Closure of fishing season in subdistrict 3.	3,000 king salmon catch quota taken.
3-Y-03-77	July 2	Specify that only gillnets of 6 inch or less mesh size may be used in subdistricts 1 and 2.	Action taken to allow harvest of the more abundant summer chums and minimize catch of the late run of kings.
3-Y-04-77	July 7	Prohibit sale of subsistence caught salmon roe in the Bonasila River to Thompson Creek portion of subdistrict 4.	Chum salmon roe quota, based on traditional harvest levels, was exceeded. Closure necessary to prevent excessive subsistence harvest.
3-Y-05-77	July 11	Maintain weekly fishing schedule at 2-1/2 days instead of 3 days in subdistricts 1 and 2.	Action taken to afford protection of early portion of fall chum run which was expected to be weak.
3-Y-06-77	July 14	Prohibit sale of subsistence caught king salmon roe in the Thompson Ck to Prospect Pt. portion of subdistrict 4.	King roe quota, based on traditional harvest levels, was exceeded. Closure necessary to prevent excessive subsistence harvest.
3-Y-07-77	July 18	Prohibit sale of subsistence caught salmon roe in the Prospect Pt. to Illinois Ck portion of subdistrict 4.	King and summer chum salmon roe quotas, based on traditional harvest levels, were exceeded. Closure necessary to prevent excessive subsistence harvest.
3-Y-08-77	July 19	Prohibit sale of subsistence caught salmon roe in subdistrict 3.	King and chum salmon roe quotas, based on traditional harvest levels, were exceede Closure necessary to prevent excessive subsistence harves
3-Y-09-77	July 21	Reduce weekly fishing schedule in subdistricts 1 and 2 from 2-1/2 days to 2 days.	Action taken to prevent over harvest of fall chum run, which was anticipated to be below average, and to distribute effort over a greater portion of the seaso
3-Y-10-77	July 23	Prohibit sale of subsistence caught king salmon roe in subdistrict 6.	King salmon roe quota, based on traditional harvest level was exceeded. Closure necessary to prevent excessive subsistence harvest.
3-Y-11-77	July 24	Closure of fishing season in subdistrict 5.	3,000 king salmon catch quota taken.
3-Y-12-77	July 25	Reopen fishing season in subdistrict 3 and reduce fishing time from 4 to 3 days per week.	Action taken as the king salmon run had passed through. Also reduced fishing time

Attachment 1. List of Yukon area emergency orders and regulations issued, 1977 (Continued).

			necessary because of anticipated below average fall chum salmon run.
3-Y-13-77	July 27	Prohibit sale of subsistence caught chum salmon roe in the Thompson Ck to Prospect Pt. portion of subdistrict 4.	Roe quota, based on traditional harvest levels, was exceeded. Closure necessary to prevent excessive subsistence harvest.
3-Y-14-77	July 28	Closure of fishing season in subdistrict 4.	1,000 king salmon catch quota taken.
3-Y-15-77	July 30	Closure of fishing season in subdistrict 6.	1,000 king salmon catch quota taken.
3-Y-16-77	August 7	Reopen fishing season in subdistrict 4 and reduce fishing time from 5 to 4 days per week.	Action taken as the king salmon run had passed through. Also reduced fishing time necessary because of apparent below average fall chum salmon run.
3-Y-17-77	August 17	Reopen fishing season in subdistrict 5 and reduce fishing time from 5 to 4 days per week.	Action taken as the king salmon run had passed through. Also reduced fishing time necessary because of apparent below average fall chum salmon run.
3-Y-18-77	August 22	Closure of fishing season in subdistricts 1, 2 and 3.	Action taken in anticipation of 200,000 chum salmon combined quota being taken in subdistricts 1, 2 and 3.
3-Y-19-77	Sept 1	Closure of fishing season in subdistrict 4.	10,000 combined chum and coho salmon quota, in effect after Aug. 15, taken.
3-Y-20-77	Sept 5	Reopen fishing season in subdistrict 6, & reduce fishing time from 5 to 4 days per week.	Action taken as the king salmon run had passed through. Also reduced fishing time necessary because of apparent below average fall chum salmon run.
3-Y-21-77	Sept 9	Closure of fishing season in subdistrict 5.	25,000 combined chum and coho salmon quota, in effect after Aug. 15, taken.
3-Y-22-77	Sept 14	Closure of fishing season in subdistrict 6.	15,000 combined chum and coho salmon quota in effect after Aug. 15, taken.
3-Y-23-77	Sept 27	Prohibit sale of subsistence caught salmon roe in subdistrict 6.	Fall chum salmon roe quota, based on traditional harvest levels, was exceeded. Closure necessary to prevent excessive subsistence harvest.
3-Y-24-77	Oct 4	Prohibit sale of subsistence caught salmon roe in subdistrict 5.	Fall chum salmon roe quota, based on traditional harvest levels, was exceeded. Closure necessary to prevent excessive subsistence harvest.

Attachment 2. Summary of 1977 Yukon district commercial and subsistence fishing regulations promulgated by Board of Fisheries at December, 1976 meeting in Soldotna.

Section	Action Taken
5AAC 03.200. FISHING DISTRICTS AND SUBDISTRICTS. (e)(1)(f)	Changed the coastal boundary between the Yukon and Kuskokwim districts from Cape Romanzof to Naskonat Peninsula.
5AAC 03.310. FISHING SEASONS. (a)(3)(A)	Established a June 10 (instead of June) opening of the commercial salmon fishing season in subdistricts 1, 2 and 3.
5AAC 03.310 WEEKLY FISHING PERIODS. (c)(1), (c)(2)	Reduced fishing time from 3 to 2-1/2 days a week between June 10 and July 10 in subdistricts 1 and 2.
5AAC 03.320. WEEKLY FISHING PERIODS. (c)(3)	Established two weekly fishing periods of 2 days each instead of a single 4 day period in subdistrict 3.
5AAC 03.332. FISHWHEEL SPECIFICATIONS & OPERATION. (a)	Specified that fishwheel baskets must be stopped from rotating during closed periods.
5AAC 03.370. REGISTRATION AND RE-REGISTRATION. (f)	Specified that each fisherman may register gear and vessel in only one subdistrict.
5AAC 03.805. SALE OF SALMON ROE. (e),(f),(j),(o)	Changed requirements for reporting the amounts of subsistence-caught salmon roe purchased or processed and prohibit sale of subsistence-caught roe by emergency order in portions of the Arctic-Yukon-Kuskokwim area.
5AAC 03.930. GEAR. (a)(1)	Specified which types of gear may be used for subsistence salmon fishing in the Arctic-Yukon-Kuskokwim area.
5AAC 03.980. PERMITS. (a)(2)(d)	Allowed fish other than salmon to be taken by permit in an area bounded by the Rodo and Nowitna Rivers in subdistrict 4 during the period June 15-July 15.
5AAC 03.980. PERMITS. (c)	Established requirements for obtaining subsistence fishing permits and reporting catches in the Arctic-Yukon-Kuskokwim area.
5AAC 03.990. RESTRICTIONS. (e)(1),(e)(2)	Allowed subsistence fishing in specific portions of subdistricts 4, 5 and 6 during the weekly closures and for 24 hours before the opening and following the closure of the commercial salmon fishing season.
5AAC 03.990. RESTRICTIONS. (e)(8)(A)(i) and (e)(8)(c)	Prohibited subsistence fishing in Blue Creek, Quartz Lake and Little Harding Lake except for whitefish and suckers which may be taken by permit.
5AAC 03.990. RESTRICTIONS. (e)(13)	Prohibited subsistence fishing for salmon with drift gill nets in subdistricts 4, 5 and 6.
5AAC 03.990. RESTRICTIONS. (e)(14)	Established a two-day weekly subsistence fishing closure following the closing of the commercial salmon fishing season in subdistricts 1, 2 and 3 and in portions of subdistricts 4, 5 and 6.
5AAC 03.990. RESTRICTIONS. (e)(15)	Prohibited subsistence salmon fishing in section 6-c of subdistrict 6 following the closure of the commercial salmon fishing season.
5AAC 03.990. RESTRICTIONS. (e)(8)(A)(i) and (e)(16)	Allowed salmon to be taken for subsistence purposes after November 20 in the Delta River.

Attachment 3. List of 1977 Yukon Area Commercial and Subsistence Fishing Regulations. 1/

ARTICLE 2.
FISHING DISTRICTS AND SUBDISTRICTS

5 AAC 03.200. FISHING DISTRICTS AND SUBDISTRICTS.

(e) Yukon district: all waters including those draining into the Bering Sea between the latitude of Canal Point light and the latitude of the westernmost point of the Naskonat Peninsula;

(1) subdistrict 1: that portion of the Yukon River drainage from its mouth upstream to the mouth of the Anuk River and all waters of Black River including waters within one nautical mile of its mouth;

(2) subdistrict 2: that portion of the Yukon River drainage from the mouth of the Anuk River upstream to Owl Slough near Marshall;

(3) subdistrict 3: that portion of the Yukon River drainage from Owl Slough upstream to the mouth of the Bonasila River;

(4) subdistrict 4: that portion of the Yukon River drainage from the mouth of the Bonasila River upstream to the mouth of Illinois Creek at Kallands

(A) section 4-A: that portion of the drainage from the mouth of the Bonasila River upstream to Prospect Point;

(B) section 4-B: that portion of the drainage from Prospect Point upstream to the mouth of Illinois Creek;

(5) subdistrict 5: that portion of the Yukon River drainage (excluding the Tanana River drainage) from the mouth of Illinois Creek to the U.S.-Canada border

(A) section 5-A: that portion of the drainage from the mouth of Illinois Creek upstream to a marker placed two miles downstream of Waldron Creek;

(B) section 5-B: that portion of the drainage from a marker placed two miles downstream of Waldron Creek upstream to the U.S.-Canada border;

(6) subdistrict 6: the Tanana River drainage

(A) section 6-A: that portion of the drainage from the mouth of the Tanana River upstream to the mouth of the Kantishna River;

(B) section 6-B: that portion of the drainage from the mouth of the Kantishna River upstream to the mouth of the Wood River;

(C) section 6-C: that portion of the drainage from the mouth of the Wood River upstream to the mouth of the Chena River.

ARTICLE 3.
SALMON FISHERY

5 AAC 03.310. FISHING SEASONS. (a)

Except as provided in secs. 320 – 370 of this chapter, salmon may be taken as follows:

(3) in the Yukon district

(A) in subdistricts 1, 2 and 3 from June 10 through August 31, except that when June 10 falls within a closed weekly period the season will open the next following open weekly period; the early season is closed by emergency order and subsequent seasons are opened and closed by emergency orders;

(B) in subdistricts 4, 5 and 6 from June 15 through September 30; the early season is closed by emergency order and subsequent seasons are opened and closed by emergency orders;

5 AAC 03.320. WEEKLY FISHING PERIODS.

(c) Yukon district

(1) subdistrict 1:

(A) June 10 through July 10, salmon may be taken from 6:00 p.m. Monday until 6:00 p.m. Tuesday and from 6:00 p.m. Thursday until 6:00 a.m. Saturday;

(B) after July 10, salmon may be taken from 6:00 p.m. Monday until 6:00 a.m. Wednesday and from 6:00 p.m. Thursday until 6:00 a.m. Saturday;

(2) subdistrict 2:

(A) June 10 through July 10, salmon may be taken from 6:00 p.m. Sunday until 6:00 p.m. Monday and from 6:00 p.m. Wednesday until 6:00 a.m. Friday;

(B) after July 10, salmon may be taken from 6:00 p.m. Sunday until 6:00 a.m. Tuesday and from 6:00 p.m. Wednesday until 6:00 a.m. Friday;

(3) subdistrict 3: salmon may be taken from 6:00 p.m. Monday until 6:00 p.m. Wednesday and from 6:00 p.m. Thursday until 6:00 p.m. Saturday;

(4) subdistrict 4: salmon may be taken from 6:00 p.m. Sunday until 6:00 p.m. Friday;

(5) subdistrict 5: salmon may be taken from 6:00 p.m. Tuesday until 6:00 p.m. Sunday, except in section 5-B where salmon may be taken seven days a week;

(6) subdistrict 6: salmon may be taken from 6:00 p.m. Monday until 6:00 p.m. Saturday.

1/ Does not include Sale of Salmon Roe Regulations.

Attachment 3. List of 1977 Yukon Area Commercial and Subsistence Fishing Regulations. 1/

ARTICLE 2.
FISHING DISTRICTS AND SUBDISTRICTS

5 AAC 03.200. FISHING DISTRICTS AND SUBDISTRICTS.

(e) Yukon district: all waters including those draining into the Bering Sea between the latitude of Canal Point light and the latitude of the westernmost point of the Naskonat Peninsula;

(1) subdistrict 1: that portion of the Yukon River drainage from its mouth upstream to the mouth of the Anuk River and all waters of Black River including waters within one nautical mile of its mouth;

(2) subdistrict 2: that portion of the Yukon River drainage from the mouth of the Anuk River upstream to Owl Slough near Marshall;

(3) subdistrict 3: that portion of the Yukon River drainage from Owl Slough upstream to the mouth of the Bonasila River;

(4) subdistrict 4: that portion of the Yukon River drainage from the mouth of the Bonasila River upstream to the mouth of Illinois Creek at Kallands

(A) section 4-A: that portion of the drainage from the mouth of the Bonasila River upstream to Prospect Point;

(B) section 4-B: that portion of the drainage from Prospect Point upstream to the mouth of Illinois Creek;

(5) subdistrict 5: that portion of the Yukon River drainage (excluding the Tanana River drainage) from the mouth of Illinois Creek to the U.S.-Canada border

(A) section 5-A: that portion of the drainage from the mouth of Illinois Creek upstream to a marker placed two miles downstream of Waldron Creek;

(B) section 5-B: that portion of the drainage from a marker placed two miles downstream of Waldron Creek upstream to the U.S.-Canada border;

(6) subdistrict 6: the Tanana River drainage

(A) section 6-A: that portion of the drainage from the mouth of the Tanana River upstream to the mouth of the Kantishna River;

(B) section 6-B: that portion of the drainage from the mouth of the Kantishna River upstream to the mouth of the Wood River;

(C) section 6-C: that portion of the drainage from the mouth of the Wood River upstream to the mouth of the Chena River.

ARTICLE 3.
SALMON FISHERY

5 AAC 03.310. FISHING SEASONS. (a)

Except as provided in secs. 320 – 370 of this chapter, salmon may be taken as follows:

(3) in the Yukon district

(A) in subdistricts 1, 2 and 3 from June 10 through August 31, except that when June 10 falls within a closed weekly period the season will open the next following open weekly period; the early season is closed by emergency order and subsequent seasons are opened and closed by emergency orders;

(B) in subdistricts 4, 5 and 6 from June 15 through September 30; the early season is closed by emergency order and subsequent seasons are opened and closed by emergency orders;

5 AAC 03.320. WEEKLY FISHING PERIODS.

(c) Yukon district

(1) subdistrict 1:

(A) June 10 through July 10, salmon may be taken from 6:00 p.m. Monday until 6:00 p.m. Tuesday and from 6:00 p.m. Thursday until 6:00 a.m. Saturday;

(B) after July 10, salmon may be taken from 6:00 p.m. Monday until 6:00 a.m. Wednesday and from 6:00 p.m. Thursday until 6:00 a.m. Saturday;

(2) subdistrict 2:

(A) June 10 through July 10, salmon may be taken from 6:00 p.m. Sunday until 6:00 p.m. Monday and from 6:00 p.m. Wednesday until 6:00 a.m. Friday;

(B) after July 10, salmon may be taken from 6:00 p.m. Sunday until 6:00 a.m. Tuesday and from 6:00 p.m. Wednesday until 6:00 a.m. Friday;

(3) subdistrict 3: salmon may be taken from 6:00 p.m. Monday until 6:00 p.m. Wednesday and from 6:00 p.m. Thursday until 6:00 p.m. Saturday;

(4) subdistrict 4: salmon may be taken from 6:00 p.m. Sunday until 6:00 p.m. Friday;

(5) subdistrict 5: salmon may be taken from 6:00 p.m. Tuesday until 6:00 p.m. Sunday, except in section 5-B where salmon may be taken seven days a week;

(6) subdistrict 6: salmon may be taken from 6:00 p.m. Monday until 6:00 p.m. Saturday.

1/ Does not include Sale of Salmon Roe Regulations.

Attachment 3. List of 1977 Yukon Area Commercial and Subsistence Fishing Regulations. (continued)

5 AAC 03.330. GEAR.

(b) In the Yukon district

(1) in subdistricts 1, 2 and 3 set gill nets and drift gill nets may be operated;

(2) in subdistricts 4, 5 and 6 set gill nets and fishwheels may be operated;

(3) repealed (Eff. 3/26/76, Reg. 57);

(4) an individual may have in operation not more than one fishwheel at any one time;

(5) fishermen shall operate or assist in operating only one type of gear at any one time.

5 AAC 03.331. GILL NET SPECIFICATIONS AND OPERATION.

(c) In the Yukon district

(1) the aggregate length of set gill net operated by an individual may not exceed 150 fathoms and the length of a drift gill net operated by an individual may not exceed 50 fathoms;

(2) in subdistricts 1 and 2, salmon may be taken with gill nets of six-inch or smaller mesh after a date specified by emergency order between June 27 and July 5;

(3) in subdistrict 3, salmon may be taken with gill nets of six-inch or smaller mesh after a date specified by emergency order between July 5 and July 15.

(e) In the Arctic – Yukon – Kuskokwim area, gill net gear shall not obstruct more than one-half the width of any waterway. In the intertidal zone this applies at any stage of the tide.

5 AAC 03.333. FISHWHEEL SPECIFICATIONS AND OPERATION. Fishwheel baskets must be stopped by the operator from rotating in the water during periods closed to commercial and subsistence fishing.

Authority: AS 16.05.251(2) and (4)

5 AAC 03.334. IDENTIFICATION OF GEAR. (a) Each drift gill net in operation shall have at one end a red keg, buoy or cluster of floats plainly and legibly marked with the permanent registration number of the operator.

(b) Each set gill net in operation shall have at each end a red keg, buoy or cluster of floats, or, in the case of set gill nets anchored to land, shall have a red keg, buoy or cluster of floats at the outer end of the net, which shall be plainly and legibly marked with the permanent registration number of the operator.

(c) Each fishwheel in operation shall have plainly and legibly inscribed on it the permanent registration number of the operator. Numbers shall be at least six inches in height with lines at least one inch wide and shall be painted in contrasting colors. These numbers shall be placed on the side of the fishwheel facing midstream of the river.

5 AAC 03.335. MINIMUM DISTANCE BETWEEN UNITS OF GEAR.

(b) In the Yukon district

(1) subdistrict 1: no part of a set gill net may be operated within 300 feet of any part of another set gill net;

(2) subdistrict 2: no part of a set gill net may be operated within 200 feet of any part of another set gill net;

(3) subdistricts 4, 5 and 6: it is unlawful to set commercial fishing gear within 200 feet of other operating commercial or subsistence fishing gear.

5 AAC 03.350. CLOSED WATERS

(c) In the Yukon district

(1) Kwikluak Pass of the south mouth area outside a line from a shore marker below Chris Point to a buoy on the opposite side of the channel;

(2) Kawanak Pass of the middle mouth area outside of buoys placed offshore from Kothlik Island;

(3) other waters farther than one nautical mile from any grassland bank;

(4) waters outside of one nautical mile from the mouth of Black River;

(5) waters of the Andreafsky River upstream of a line from markers placed on each side of the river at the mouth;

(6) Tanana River upstream of the mouth of the Chena River;

(7) tributaries of the Yukon and Tanana Rivers;

(8) all other waters of the district except in subdistricts 1 through 6.

5 AAC 03.360. QUOTAS. When the king salmon quotas have been attained in any subdistrict, the season in the subdistrict will be closed and a later season will be announced allowing fishing to attain quotas for the other species of salmon. Commercial catches are restricted to the following:

(1) in the Yukon district

(A) subdistrict 1, after July 15; subdistrict 2, after July 18; and subdistrict 3, after July 21: 200,000 chum salmon from the areas;

(B) subdistrict 3: 3,000 king salmon;

(C) subdistrict 4: 1,000 king salmon and after August 15, 10,000 chum and coho salmon combined for the area;

(D) subdistrict 5: 3,000 king salmon and after August 15, 25,000 chum and coho salmon combined for the area;

(E) subdistrict 6: 1,000 king salmon and after August 15, 15,000 chum and coho salmon combined for the area;

5 AAC 03.370. REGISTRATION AND REREGISTRATION. (a) Simultaneously with the area registration described in 5 AAC 39.120, each registrant shall indicate in which district and subdistrict such gear and vessel are intended to be first used during the season.

(b) Subsequent to the initial registration described in 5 AAC 39.120, for subdistricts 1 and 2 in the Yukon district, a registrant may operate a vessel and gear in another subdistrict after a 48-hour waiting period following reregistration for the subdistrict of intended operation. The registrant may not fish during the 48-hour waiting period following reregistration.

(c) In the Yukon district, gear and vessels registered to fish in subdistrict 3 may not transfer to subdistricts 1 or 2 until after July 10.

(d) In the Yukon district, gear and vessels registered to fish in either subdistricts 1, 2 or 3 may not transfer to subdistricts 4, 5 or 6.

(e) In the Yukon district, gear and vessels registered to fish in subdistricts 4, 5 or 6 may not transfer to another subdistrict.

(f) In the Yukon district, a fisherman may register gear and vessel in only one subdistrict.

Authority: AS 16.05.251(2),(4),(10) and (12)

ARTICLE 9.
SUBSISTENCE FISHERY

5 AAC 03.930. GEAR. (a) In the Arctic – Yukon – Kuskokwim area

(1) unless otherwise provided in this chapter, salmon for subsistence purposes may be taken only by gill net, beach seine or fishwheel, except that salmon may be taken by spear in the Holitna River drainage of the Kuskokwim district;

(2) whitefish and sheefish may be taken by spear, dip net, fyke net and other legal forms of gear.

(b) Repealed. (Eff. 3/8/74, Reg. 49)

Authority: AS 16.05.251(2) and (4)

5 AAC 03.980. PERMITS. (a) Fish may be taken for subsistence purposes without a permit except as provided in secs. 805 and 990 of this chapter and except in the following locations where a yearly permit must be secured from the local representative of the department:

(2) Yukon district

(A) Tanana River drainage above the mouth of the Wood River;

(B) Yukon River drainage from the mouth of Hess Creek to the mouth of Dall River;

(C) Middle Fork drainage of the Koyukuk River system between Dry Gulch and the mouth of Hammond River;

(D) fish other than salmon may be taken by permit designating restrictive measures for the protection of salmon in subdistrict 4 between the mouths of the Rodo and Nowitna Rivers during June 15 to July 15;

(b) The number of fish taken for subsistence purposes may be limited under the terms of a permit.

(c) If a permit is required by secs. 930 – 990 of this chapter, the following stipulations apply: Permits shall be obtained from a local representative of the department prior to subsistence fishing. Permits shall be retained in the possession of the permittee and be readily accessible for inspection while taking or transporting the species for which the permit is issued. The permit may designate the time and area of fishing and the type and amount of fishing gear. Each subsistence fisherman shall keep accurate records of the catch involved, showing the number of fish taken by species, location and date of the catch, and such other information as the department may require. Subsistence fishing reports shall be completed on forms provided by the department and submitted to the department office from which the permit was issued at a time specified by the department for each particular area and fishery. Only one permit will be issued to each household per year.

5 AAC 03.990. RESTRICTIONS.

(e) In the Yukon district

(1) during the weekly closures of the commercial salmon fishing season and for 24 hours before the opening and following the closure of the commercial salmon fishing season, salmon may not be taken in the following locations:

(A) subdistricts 1, 2 and 3;

(B) subdistrict 4, excluding the Koyukuk and Innoko River drainages and excluding that area between the mouths of the Rodo and Nowitna Rivers where the requirements of sec. 980(a)(2)(D) of this chapter are effective;

(C) subdistrict 5 excluding the Tozitna River drainage and section 5-B;

(D) subdistrict 6 excluding the Kantishna River drainage and that portion of the Tanana River drainage upstream of the mouth of the Salcha River;

(2) repealed (Eff. 3/6/77, Reg. 61);

(3) in subdistricts 1 and 2, commercial fishermen may not take salmon for subsistence purposes by gill nets larger than six-inch mesh after a date specified by emergency order between June 27 and July 5;

(4) in subdistrict 3, commercial fishermen may not take salmon for subsistence purposes during the commercial salmon fishing season by gill nets larger than six-inch mesh after a date specified by emergency order between July 5 and July 15;

(5) during the weekly open periods of the commercial salmon fishing season, a commercial fisherman may not fish for commercial and subsistence purposes simultaneously with more than one type of gear;

(6) the aggregate length of set gill net in use by an individual may not exceed 150 fathoms and each drift gill net in use by an individual may not exceed 50 fathoms in length;

(7) in subdistricts 4, 5 and 6, it is unlawful to set subsistence fishing gear within 200 feet of other operating commercial or subsistence fishing gear;

(8) the following locations in the upper Yukon River drainage are closed to subsistence fishing except that whitefish and suckers may be taken under the authority of a permit designating restrictive measures for the protection of other fishes (this permit may be obtained from the commissioner or his local representative):

(A) streams and within 500 feet of their stream mouths

(i) Birch Creek, Beaver Creek, Clearwater Creek (Delta Clearwater Creek at 64° 06′ N. lat., 145° 34′ W. long.),

Clear Creek (Richardson Clearwater Creek at 64° 14′ N. lat., 146° 16′ W. long.), Goodpaster River, Shaw Creek, Salcha River, Little Salcha River, Chena River, Chatanika River, Big Salt River, Hess Creek, and Blue Creek;

(ii) Dall River: closed June 10 through September 10;

(B) streams: Ray River;

(C) lakes: Deadman, Jan, Boleo, Birch, Lost, Harding, Craig, Fielding, Two-Mile, Quartz, and Little Harding;

(D) sloughs: Chena (Piledriver);

(9) the following drainages located north of the main Yukon River are closed to subsistence fishing:

(A) Kanuti River upstream from a point five miles downstream of the state highway crossing;

(B) Fish Creek upstream from the mouth of Bonanza Creek;

(C) Bonanza Creek;

(D) Jim River including Prospect Creek and Douglas Creek;

(E) South Fork of the Koyukuk River system upstream from the mouth of Jim River;

(F) Middle Fork of the Koyukuk River system upstream from the mouth of the North Fork except between Dry Gulch and the mouth of Hammond River where subsistence fishing is allowed by permit only;

(G) North Fork of the Chandalar River system upstream from the mouth of Quartz Creek;

(10) the main Tanana River and its adjoining sloughs are closed to subsistence fishing between the mouth of the Salcha River and the mouth of the Gerstle River, except that salmon may be taken in the area upstream of the Richardson Highway bridge to the mouth of Clearwater Creek after November 20;

(11) the Tanana River drainage is closed to subsistence fishing for pike between the Kantishna River and the Delta River at Black Rapids on the Richardson Highway and Cathedral Rapids on the Alaska Highway;

(12) in the Yukon River drainage (excluding the Koyukuk River drainage) between the mouth of Rodo River to the mouth of the Nowitna River, fish other than salmon may be taken under authority of a permit designating restrictive measures for the protection of salmon during June 15 – July 15;

(13) in subdistricts 4, 5 and 6, salmon may not be taken for subsistence purposes by drift gill net;

(14) during any commercial fishing season closure of greater than five days in duration, salmon may not be taken during a two-day period each week in the following subdistricts:

(A) in subdistricts 1, 2 and 3, from 6:00 p.m. Monday until 6:00 p.m. Wednesday;

(B) in subdistrict 4, excluding the Koyukuk and Innoko River drainages and excluding that area between the mouths of the Rodo and Nowitna Rivers where the requirements of 5 AAC 03.980(a)(2)(D) are effective, salmon may not be taken from 6:00 p.m. Friday until 6:00 p.m. Sunday;

(C) in subdistrict 5, excluding the Tozitna River drainage and section 5-B, salmon may not be taken from 6:00 p.m. Sunday until 6:00 p.m. Tuesday;

(D) in sections 6-A and 6-B of subdistrict 6, excluding the Kantishna River drainage and that portion of the Tanana River drainage upstream of the mouth of the Salcha River, salmon may not be taken from 6:00 p.m. Saturday until 6:00 p.m. Monday;

(15) in section 6-C of subdistrict 6, salmon may not be taken following the closure of the commercial salmon fishing season;

(16) the Delta River is closed to subsistence fishing, except that salmon may be taken after November 20.

(g) In the Arctic–Yukon–Kuskokwim area

(1) each fishwheel must have the first initial, last name, and address of the operator plainly and legibly inscribed on the side of the fishwheel facing midstream of the river;

(2) for all gill nets and unattended gear, the first initial, last name, and address of the operator must be plainly and legibly inscribed on an attached keg or buoy;

(A) this information must be plainly and legibly inscribed on a stake inserted in the ice that is attached to gear operated under the ice;

(B) kegs or buoys attached to gill nets operated in the Kuskokwim, Norton Sound and Kotzebue districts shall be any color except red;

(3) a gill net may obstruct not more than one-half the width of any fish stream; a stationary fishing device may obstruct not more than one-half the width of any salmon stream.

Attachment 4. Summary of special projects conducted in the Yukon Area by the Division of Commercial Fisheries, 1977.

---

1. YUKON RIVER TEST FISHING
   a. Location: Flat Island and Big Eddy (Kwikluak Pass near Emmonak) in the south mouth of the Yukon River.

   b. Objectives: Determine run timing and relative abundance of king, and summer chum, fall chum and coho salmon in the south mouth channel of the Yukon River.

   c. Results:

      1) Flat Island: A total of 359 king and 1,815 summer chum salmon was taken in index set gillnets from June 9 through July 14. Peaks in the king salmon migration occurred during June 25-30. Peaks in the summer chum migration occurred during June 28-30 and July 4-7.

      2) Big Eddy: A total of 2,520 fall chum and 853 coho salmon was taken in index set gillnets from July 21 through August 28. Peaks in the fall chum migration occurred during July 25-27, August 8-9 and August 15-16. Peaks in the coho salmon migration occurred during August 14-16.

2. SUBSISTENCE SALMON FISHERY SURVEYS
   a. Location: Yukon, Koyukuk, Tanana Rivers, and Yukon Territory Villages.

   b. Objectives: Determine subsistence utilization of salmon and fishing effort needed for formulating future management procedures and goals, also collect tag recoveries from high seas and Department tagging programs.

   c. Results: A total of 691 fishing families were surveyed and their catches totaled 20,388 king salmon and 267,127 other salmon. A total 1,000 river miles traveled by boat and 500 air miles by single engine aircraft in the conducting of the survey. Yukon territory subsistence catch data was furnished by Environment Canada - Fisheries Service (Whitehorse Office).

3. YUKON RIVER ANADROMOUS FISH INVESTIGATION
   a. Location: Yukon River drainage.

   b. Objectives: Develop estimates or indices of magnitude and quality of king and chum salmon escapements; determine size and effect of commercial and subsistence harvest on various stocks of king and chum salmon; plus relate collected data to long-term trends in the salmon stocks and evaluate management procedures needed to maintain them at their level of maximum yield.

c. Results: The king salmon escapement for the Anvik River in 1977 was estimated to be 1,354. Two hundred and seventy-seven king salmon were enumerated at the Whitehorse fishway in 1977. This count was only 22% of the average yearly count of 606 for the 18 year period beginning in 1959 and ending in 1976.

The 1977 expanded Anvik tower count of summer chums was 162,514, 27% of the 1975 record count. Escapements of summer chums in other systems were also less than 1975, but overall escapements were considered above average throughout most of the Yukon River drainage.

Fall chum escapements in 1977 were above average in the Tanana River system but average at best elsewhere. A total of 17,925 fall chums were observed in the Delta River, more than double any previous documented escapement. In the Fishing Branch River (Porcupine River drainage) the 1977 escapement was estimated at 32,500, substantially less the exceptionally large escapement of 353,282 documented in 1975.

4. COMMERCIAL SALMON CATCH SAMPLING
   a. Location: Various locations in the different subdistrict fisheries.
   b. Objectives: Obtain age, sex and size information for commercially caught fish.
   c. Results: Several hundred samples of king, chum and coho salmon were collected in 1977. Detailed age, sex and size composition data has been compiled and will be presented in a subsequent separate report.

5. YUKON RIVER FALL CHUM AND COHO SALMON TAG-RECOVERY PROJECT
   a. Location: Yukon River drainage.
   b. Objectives: The primary objective of this study is to determine the relative timing and distribution of various stocks past the commercial fishery in order to provide for more effective management.
   c. Results: In 1977 a total of 5,358 fall chum and 228 coho salmon, captured with three fishwheels (located on the north and south bank of the Yukon River) near Galena and Ruby were tagged. A total of 1,951 (36.4%) tagged chum and 51 (22.3%) coho salmon were recovered. The greater majority of the recoveries of fish tagged on the north bank were destined for spawning areas in the upper Yukon area upstream of the Tanana River mouth. Conversely, most of the recoveries of fish tagged at the south bank were recovered within the Tanana River System. Although analysis of recovery data in respect to timing in inconclusive, there are indications that the timing of upper Yukon stocks (presumed to be mainly Procupine River origin) is earlier than the Tanana River run.

Attachment 5:

1977 YUKON AREA SALMON MANAGEMENT PLAN FOR COMMERCIAL AND SUBSISTENCE FISHERIES

ALASKA DEPARTMENT OF FISH AND GAME
Division of Commercial Fisheries
Arctic-Yukon-Kuskokwim Region

Area Biologist: Michael Geiger
333 Raspberry Road
Anchorage 99502

Asst. Area Biologist: Fred Andersen
1300 College Road
Fairbanks 99701

1977 YUKON AREA SALMON MANAGEMENT PLAN

ALASKA DEPARTMENT OF FISH AND GAME
DIVISION OF COMMERCIAL FISHERIES

INTRODUCTION

This management plan was developed in order to inform fishermen, processors and other interested persons regarding the status of the 1977 Yukon River salmon runs and Department strategies that may be used in regulating the various fisheries. Statements made concerning anticipated run magnitudes and management strategies are based on the best information presently available. Statements regarding fishing times and relative sizes of the runs should be considered as tentative and are subject to change. This management plan will be updated and improved as information from ongoing and proposed Department programs becomes available.

The overall objective of the Yukon area research and management programs is to manage the various salmon runs on an optimum sustained yield basis. The commercial fishery is regulated on the assumption that a harvestable surplus, after providing for escapements and subsistence requirements, is available. Subsistence fishing has been designated by the Board of Fisheries as the highest priority use. Although, where the subsistence fishery has declined, the Department has liberalized regulations to allow development of commercial fisheries.

An important consideration that must be taken into account when discussing the Yukon River fisheries is the interception of western Alaskan salmon (including Yukon River stocks) by the Japanese high seas fishery. Japanese high seas king salmon catches have averaged 224,000 fish annually during the period 1966-1976. A record 554,000 kings were taken in 1969 by this fishery. In some years the Japanese catch has exceeded the total western Alaskan catch (commercial and subsistence). The majority of kings taken are immature (4 year olds) averaging 6 pounds whereas most of the adults (mostly 6 years) average 20-25 pounds. Based on tagging and scale analysis studies it is estimated that in excess of 80% of the Japanese catches of king salmon are of western Alaskan origin. The Japanese fishery is intercepting western Alaskan kings at a higher rate than Bristol Bay sockeye (red) salmon.

Western Alaskan chum salmon are believed to be intercepted in substantial numbers by the Japanese fishery in the Bering Sea. This fishery annually harvests 2-4 million chums; however the degree of interception is unknown because of limited tagging studies. Also it should be mentioned that western Alaskan chums are being intercepted by the U.S. fishery at South Unimak (Alaska Peninsula) as demonstrated by tagging studies. Annual catches of this interception fishery average 200-400,000 chums.

Management tasks are made difficult due to the character of the salmon runs, fisheries and the river itself. Since most of the fisheries

have only developed or expanded in recent years, there is a lack of adequate escapement and return data on which to fully evaluate the effects of increased commercial harvests. The various fisheries scattered over 1,400 river miles are harvesting mixed stocks usually several weeks and hundreds of miles from their spawning grounds. The Yukon River commercial fishery is essentially a "cape fishery" and as a result of fishing on mixed stocks, some tributary populations may be under or overharvested in relation to their actual abundance. Due to the turbid water conditions of the main river and the vast size of the drainage (330,000 square miles), one-third of which is in Canada, accurate in-season assessment of the escapement immediately past the intensive downriver fishery is very difficult with the present available technology. Also management of the runs (often mixed species) is hampered by the variable run timing and pattern of entry into the lower fishery which causes difficulties when attempting to compare catch data.

New research projects are underway and other programs are planned, once additional funding becomes available, to obtain the biological information necessary for better management of the salmon runs. For example, a comprehensive tag-recovery program was begun in 1976 to determine the relative timing and distribution of fall chum stocks past the commercial fishery. If various stocks can be identified from this program and scale analysis studies, then the fishery can be effectively regulated in order to achieve the proper balance between catch and escapement. Future salmon studies include expansion of the test fishing program, sonar assessment of the escapement in the main river, and upgrading escapement documentation in tributary streams.

As a result of the above limitations coupled with an increase in effort and efficiency of the commercial fishery and the need to provide for subsistence utilization, the management of the Yukon River salmon runs must take a conservative approach. This can be achieved by establishing harvest goals, mesh size restrictions, area catch quotas, reduced weekly fishing periods, fishing season closures, etc. During the fishing season if it becomes apparent that the run is substantially smaller or larger than needed for escapement and subsistence requirements, then the commercial harvest rates will be adjusted through the use of the emergency order or, less frequently emergency regulation authority.

OUTLOOK FOR 1977

King Salmon: In most years the dominant age class returning are 6 year old fish, however, 5 and 7 year old fish also contribute substantially to the run. The 1971 brood year run (6-year olds) was above average in abundance as indicated by comparative catch and escapement data. However there are indications that the offspring from the 1971 brood year may have experienced poor survival. Japanese Bering Sea catches of immature fish (four year olds) in 1975 were relatively low indicating below average abundance. Therefore, the return of king salmon in 1977 may also be below average in magnitude, even though the

1971 brood year (6 year olds) run was above average in magnitude and good escapements were achieved that year. In summary, based on the best information available, the magnitude 1977 Yukon River king salmon run is expected to be average at best.

The Board of Fisheries enacted regulations effective for the 1977 fishing season which reduced the weekly fishing period from 3 to 2-1/2 days a week during June 10 to July 10 in subdistricts 1 and 2. Also the opening of the king salmon season was delayed until June 10 in the lower three subdistricts in order to afford more protection to the early portion of the run. These regulation changes were required because of recent declines in the runs and increased fishing effort.

Summer Chum Salmon: Normally, the Yukon River summer chum (dog salmon) runs are composed of four year old fish, although in some years five year old fish are present in large numbers. The return of four year olds in 1977 will be dependent on the strength of the 1973 brood year and the survival of the resulting offspring. Based on the available catch and escapement data, the 1973 summer chum run was considered below average to average in magnitude. In summary, it is expected that the magnitude of the 1977 Yukon River summer chum salmon run will probably be average at best and certainly not as large as the good runs experienced during the past three years.

Fall Chum Salmon: Similar to the summer run, the majority of the fall chums returning each year are four year old fish. Based on comparative catch data and limited escapement information, the 1973 brood year run was generally considered below average in magnitude. Although escapements in 1973 in the upper Tanana River system was considered average, escapements in the larger producing systems (Toklat and Porcupine Rivers) were poor. Based on the above information, it is expected that the 1977 Yukon River fall chum salmon run will be below average in abundance. Therefore, the Department will probably reduce fishing time in all subdistricts in order to provide for adequate escapements in view of the expected poor return.

Coho Salmon: The coho salmon run annually is much smaller than the fall chum run. The coho run is of minor importance and the harvest is dependent on the duration of the fishery for fall chums.

MANAGEMENT STRATEGY, LOWER YUKON (SUBDISTRICTS 1, 2 AND 3) FISHERIES

King and Summer Chum Salmon: Sustained yield management of the king and summer (dog) chum salmon runs is compounded by the fact that both species exhibit similar run timing. However, chum salmon are more abundant and during most recent years additional numbers could have been harvested.

A maximum commercial harvest of 70-80,000 king salmon for the entire river in Alaska has been established. Adhering to this maximum harvest is essential in order to provide for adequate escapements because

of recent declines in the run and increasing fishing effort. This maximum harvest should not be exceeded unless an exceptionally large run is indicated. In subdistricts 1 and 2 the combined harvest should not exceed 62-72,000 kings. The subdistrict 3 king salmon harvest is governed by the 3,000 season catch quota. (The upper Yukon subdistricts are limited by a combined 5,000 king salmon quota).

If the run is small, fishing time in subdistricts 1 and 2 will be initially reduced from 2-1/2 to 2 days a week not later than June 20-25 (for normal run timing). Additional reductions in fishing time or an early closure of the season may be necessary if indicated low abundance continues in order to provide for adequate escapements.

A reduction in fishing time is favored instead of complete early season closure in June which would preclude any harvest of summer chums. Achievement of an optimum harvest of summer chums while providing protection of king salmon is a complex problem facing management.

An additional option rather than a season closure would be a changeover to 6 inch or less mesh nets during late June - early July which would allow harvesting of the more abundant chums during this period and minimize the catch of kings. It should be clearly stated that the Department recognizes the importance of the long established king salmon fishery. The intention of the 6 inch or less maximum mesh size regulation in the lower two sub-districts is to allow an optimum sustained yield of chum salmon after a normal harvest of king salmon, consistent with spawning ground and subsistence fishery requirements, has been made.

In subdistrict 3 the changeover date to gillnets of 6 inch or smaller mesh will take place between July 5-15 after the closure of the king salmon season. The reopening of the season will be dependent on the timing of the salmon runs in order to minimize the incidental capture of the late run of kings.

The Yukon River summer chum salmon run appears to be in healthy condition and additional harvests may be warranted during years of high abundance. If the summer chum run is judged to be considerably below average in 1977 then a reduction in fishing time from the normal three day a week fishery in late June - mid-July may be required.

Fall Chum and Coho Salmon: The Yukon River fall chum and coho salmon fishery which began in the early 1960's, never really became developed until 1969. Fall chums are of good quality throughout most of the river and are in high demand. In the face of increasing fishery effort and catches, the Department established a 250,000 maximum harvest limit for the entire river until future returns from current levels of harvest can be evaluated. This maximum harvest was later used as a basis for establishing quotas (200,000 fall chums in the lower three subdistricts combined; and 50,000 combined chum and coho salmon allocated among the three upper subdistricts).

The above quotas are based on average or better than average runs and therefore do not represent "guaranteed" catches. If the runs are considerably below average, then fishing time restrictions or season closures may be required resulting in catches smaller than the quotas. In view of the expected poor return of fall chums in 1977, a reduced

fishing schedule in July will probably be implemented by emergency order. The regular weekly fishing time of 2-1/2 days in effect through July 10 in subdistricts 1 and 2 would be continued. Unless there are indications of a strong showing of fall chums, the Department intends to reduce fishing time to 2 days a week in late July.

A reduction in fishing time during July would provide for increased escapements, especially of the early run Porcupine River stocks which are expected to be weak, plus allow the fall chum harvest to be spread throughout most of the run. Also extending the fall chum fishery over a longer duration would allow harvest of cohos which peak later. If a strong run later develops during the course of the season (assumed due to the arrival of the later Tanana River run), then fishing time may be increased depending on effort levels.

MANAGEMENT STRATEGY, UPPER YUKON (SUBDISTRICTS 4, 5, AND 6) FISHERIES

King and Summer Chum Salmon: As in the lower Yukon area, the king and summer chum (dog) salmon runs in the upper Yukon area exhibit similar run timing.

In the upper Yukon area the commercial king salmon fishery is regulated by a 5,000 fish quota apportioned to the various subdistricts. Presently there is no quota on the numbers of summer chums that may be taken.

If either a weak run of king or summer chums develops during 1977 in the upper Yukon then the Department would consider various restrictions. These restrictions would probably vary in each subdistrict because of the different types of fisheries and the importance of the species harvested.

Fishermen in subdistrict 4 usually retain their kings for subsistence rather than sell them in order to allow the commercial fishing season to remain open for the more abundant and commercially valuable summer chums. However, because of a substantial increase in fishing effort due to the rapid development of the commercial fishery, the total harvest (commercial plus subsistence) may exceed traditional harvest levels in these subdistricts.

If the king salmon quota was taken relatively early in the season of if the king run was poor, when chums are still abundant, the season would be closed and later reopened. The season in subdistrict 4 could be reopened sooner if only fishwheels (and possibly gill nets of 6 inch or smaller mesh) were allowed to be fished commercially. Fishwheels and small mesh gill nets are more efficient toward capturing chums and at the same time result in less kings taken.

If the summer chum salmon run was below average in magnitude, then fishing time in subdistrict 4, where the bulk of the upper Yukon harvest is taken, would be reduced. A reduction in fishing time from the present 5 days a week schedule would allow the fishery to be "spread out" over the duration of the run.

In subdistrict 5 kings are of greater importance and are taken with mostly gillnets for both commercial and subsistence purposes. Summer chums are not abundant and are mainly retained for subsistence. Once the king salmon quota was taken in this subdistrict the fishery would be closed until the fall season. If the king run was poor, then fishing time would be reduced.

In subdistrict 6 fishwheels are primarily used to harvest kings and summer chums for both commercial and subsistence purposes. Once the king quotas was taken or if the run was poor, the commercial fishing season would be closed. A season closure would also aid in bolstering summer chum salmon escapements. Due to a weak parent year (1973) a below average return of summer chums is expected in this subdistrict.

Fall Chum and Coho Salmon: In the upper Yukon area fall chum and coho salmon are present during the period from mid-August through September. The commercial salmon fishery during this period is regulated by a 50,000 combined chum and coho salmon quota. As in the lower Yukon area, cohos are of minor importance and are taken incidentally to the more abundant fall chums.

If a substantially weak run of fall chums is indicated (based on lower Yukon area catches), then a reduction of fishing time from the present 5 days a week would probably be implemented. A reduction in fishing time would tend to allow a more equal distribution of effort over a greater portion of the run. The early segment of the run is believed destined primarily for the Porcupine River system where the return is expected to be especially weak in 1977. The late portion of the run are mainly of Tanana River origin and additional fishing time may be warranted if a strong return of this stock develops.

In subdistrict 6 delay in the opening of the fall season may be implemented in order to provide for a more equitable harvest. In some years, the greater majority of the catch quotas were taken in the lower portions of subdistrict 6. A delay in the opening of the season, coupled with a possible reduction in fishing time, would allow the fall chum run to distribute itself throughout the subdistrict. This in turn would provide a more equitable harvest among various fishermen groups. Also, more important, balanced escapements would be realized since the harvest would be "spread out" over a longer period of time.

In all the quota fisheries in the upper Yukon area the Department plans to closely monitor the catches. Catches should not exceed the subdistrict quotas by more than 10 percent. Fall chums tend to fluctuate sharply in abundance and often it is difficult to project ahead when the quota may be taken. Fishermen and processors will be given at least 24 hours notice prior to the expected season closure date.

SALE OF SUBSISTENCE SALMON ROE

During 1975, the Alaska State Legislature passed a bill which allowed the sale of roe from subsistence caught salmon in the Arctic-Yukon-Kuskokwim Region for the 1975 and 1976 fishing seasons. The legislation provided for wanton waste control, establishing a permit system and formulated broad quidelines setting an upper limit on the sale of roe based on recent subsistence salmon (number of fish) catch levels. The Board of Fisheries also adopted regulations to administer the legislation pertaining to the sale of subsistence roe.

The legislation allowing the sale of subsistence salmon roe was for a two year period only and expired on January 1, 1977. Continuation of subsistence sale of roe beyond the 1976 fishing season will be dependent on legislative action. The purpose of the legislation was to allow subsistence fishermen to sell the roe normally discarded from traditional harvest levels. Problems associated with legalizing the sale of subsistence salmon roe are: 1) stripping the roe from fish and wasting the carcasses; and 2) harvesting excess salmon, beyond normal food requirements.

If authorized by the Legislature for the 1977 fishing season, the sales of subsistence roe in each subdistrict by species will be terminated by emergency order when roe poundage quotas (based on the 1970-74 average annual subsistence catches) are exceeded or appears likely, to be exceeded. In no instance will the sale of subsistence roe be allowed to be continued if the resulting subsistence fish catch exceeds or likely exceed the 1974 subsistence catch by 10 percent. The following roe quotas (unprocessed weight) have been established for the various Yukon subdistricts or portions of subdistricts:

Subdistrict	Kings	Summer Chums	Fall Chums	Total Chums
1	2,400 lbs	-	-	9,600
2	4,600 lbs	-	-	12,300
3	5,100 lbs	-	-	2,500
4				
Anvik Grayling	500 lbs	10,800	-	
Kaltag-Koyukuk	1,800 lbs	14,300	-	
Galena-Kallands	2,200 lbs	2,200	3,400	
Subtotal	4,500 lbs	27,300	3,400	
5	4,800 lbs	3,000	9,100	
6	1,100 lbs	4,000	11,800	

The above roe quotas are tentative and are subject to change based on sampling of the subsistence catch to determine average roe weights and sex ratios.

If wanton waste of salmon or circumvention of salmon management programs are occurring including catch reporting violations the Department may close a particular area to the sale of subsistence roe. Fishermen are encouraged to report documented violations to the Department of Fish and Game or Division of Fish and Wildlife Protection (Dept of Public Safety) in order that follow up action may be taken.

Questions or comments concerning the 1977 Yukon Area Salmon Management Plan should be directed to:

Michael F. Geiger
Yukon Area Management Biologist
Alaska Department of Fish and Game
Division of Commercial Fisheries
333 Raspberry Road
Anchorage, Alaska 99502
Phone #344-0541

Fred M. Andersen
Yukon Assistant Area Mgmt Bio.
Alaska Dept of Fish and Game
Division of Comm. Fisheries
1300 College Road
Fairbanks, Alaska 99701
Phone #452-1531

BROOKS RANGE

KOTZEBUE SOUND

SEWARD PENINSULA

NORTON SOUND

KOYUKUK R.

YUKON R.

ILLINOIS Cr.

GALENA

RUBY

334-40 (Y-4)

Porcupine R.

Chandalar R.

Ft. YUKON

YUKON R.

STEVENS VILLAGE

CIRCLE

334-50 (Y-5)

TANANA R.

FAIRBANKS

334-60 (Y-6)

NENANA

334-10 (Y-1)

BONASILA R.

Jack R.

(Y-2) 334-20

334-30 (Y-3)

YUKON MANAGEMENT AREA

YUKON AREA

COMMERCIAL SALMON CATCH AND EFFORT DATA
YUKON AREA, 1976

Subdistrict	Fishing Vessels	Kings	Summer Chums	Fall Chums	Total Chums	Cohos	Total
1	453	62,632	269,523	112,693	382,216	4,084	448,932
2	189	17,413	99,747	21,212	120,959	17	138,389
3	42	4,239	10,254	4,250	14,504	-	18,743
Subtotal Lower Yukon	684	84,284	379,524	138,155	517,679	4,101	606,064
4	81	385	211,277	1,742	213,019	-	213,404
5	57	2,900	860	5,387	6,247	-	9,147
6	48	1,102	6,566	17,998	24,564	1,096	26,762
Subtotal Yukon	186	4,387	218,703	25,127	243,830	1,096	249,313
Total	870	88,671	598,227	163,282	761,509	5,197	855,377

Commercial Salmon Catches, Yukon Area, 1961-1976

	Kings	Summer Chums	Fall Chums	Total Chums	Coho
1961	120,260		42,577	42,577	2,855
1962	94,374		53,160	53,160	22,926
1963	116,994				5,572
1964	93,587		8,347	8,347	2,446
1965	118,098		23,317	23,317	350
1966	93,315		71,045	71,045	19,254
1967	129,706	11,179	38,274	49,453	11,047
1968	106,526	14,470	52,925	67,395	13,303
1969	90,223	42,121	149,739	191,860	14,981
1970	80,269	105,612	241,112	346,724	12,245
1971	110,507	43,300	246,384	289,684	12,203
1972	92,840	80,479	207,365	287,844	22,233
1973	75,353	253,136	264,899	518,035	36,641
1974	97,919	606,085	273,158	879,243	16,240
1975	63,740	719,703	265,156	984,859	2,346
1976	88,671	598,227	163,282	761,509	5,197